PB-230 713

POLLUTION OF LAKE SUPERIOR AND ITS TRIBUTARY BASIN - MINNESOTA-WISCONSIN-MICHIGAN. PROCEEDINGS OF CONFERENCE, SECOND MEETING OF THE SECOND SESSION (RECONVENED) HELD AT DULUTH, MINNESOTA ON JANUARY 14-15, 1971. VOLUME 1

Environmental Protection Agency
Washington, D. C.

1971

DISTRIBUTED BY:

NTIS
National Technical Information Service
U. S. DEPARTMENT OF COMMERCE
5285 Port Royal Road, Springfield Va. 22151

PB 230 713

PROCEEDINGS

SECOND MEETING OF THE
SECOND SESSION (Reconvened)
DULUTH, MINNESOTA
January 14-15, 1971 Volume I

Reproduced by
NATIONAL TECHNICAL
INFORMATION SERVICE
U S Department of Commerce
Springfield VA 22151

CONFERENCE

In the Matter of Pollution of Lake Superior and its Tributary Basin-Minnesota-Wisconsin-Michigan

ENVIRONMENTAL PROTECTION AGENCY · WATER QUALITY OFFICE

SECOND MEETING OF THE CONFERENCE
IN THE MATTER OF
POLLUTION OF LAKE SUPERIOR AND ITS TRIBUTARY BASIN
IN THE STATES OF MINNESOTA. WISCONSIN, AND MICHIGAN.

VOLUME I

Great Hall
Radisson Duluth Hotel
Duluth, Minnesota
January 14, 1971

ia

SECOND MEETING OF THE CONFERENCE
IN THE MATTER OF
POLLUTION OF LAKE SUPERIOR AND ITS TRIBUTARY BASIN
IN THE STATES OF MINNESOTA. WISCONSIN, AND MICHIGAN.

VOLUME I

Great Hall
Radisson Duluth Hotel
Duluth, Minnesota
January 14, 1971

1a

CONTENTS

Page

Opening Statement - Murray Stein 1

The Honorable Wendell Anderson 4

The Honorable Patrick J. Lucey 6

The Honorable W. G. Milliken (read by R. Purdy) 13

The Honorable Philip A. Hart (read by M. Stein) 14

The Honorable Gaylord Nelson, The Hon. John Blatnik, The Hon. Walter Mondale, The Hon. Hubert Humphrey, The Hon. William Proxmire, The Hon. Philip Hart (read by M. Stein) 15

The Honorable Patrick J. Lucey (letter) 15

The Honorable Philip E. Ruppe (read by M. Stein) 18

Communications

- Calumet Laurium Keweenaw Chamber of Commerce 29
- League of Women Voters of the Copper Country 30
- Mr. and Mrs. D. W. Hubbard 31
- Robert R. and Viola Brown 31
- Dr. and Mrs. J. M. Skaates 32
- Escanaba League of Women Voters 33
- Karen Hubbard 33
- Mrs. Jerry Bell, League of Women Voters 34
- Karen Hubbard 35
- Mrs. M. A. Syfers, League of Women Voters 35

Robert W. Sharp 36

Ray J. White 42

Communication

- Mrs. Kohn Toussaint, League of Women Voters 43

CONTENTS, Continued

Charles H. Stoddard 44

Thomas G. Frangos 60

Communications

The Honorable Gaylord Nelson, et al. (Read by M. Stein) 68

John P. Badalich 69

Grant T. Merritt 116

Charles E. Carson 130

Herbert Bergson 151

Communications

Dorothy Lindquist 155

Mary W. Andeen 156

Nancy Scofield 156

Nancy Scofield 156

Linda K. Warren 157

Mrs. George R. Mettson 157

Mrs. Douglas A. Stuart 158

Dale W. Olsen 159

Communications

Viola J. Brown and Robert T. Brown 175

Robert Roningen 177

Bryan Hand 202

Don Mimette 204

John C. Green 206

CONTENTS, Continued

United States Steel Corporation 209

Public Utilities Commission, Village of Hibbing 214

Public Utilities Commission, Village of Babbitt 216

Village of McKinley (read by J. Badalich) 219

Edward T. Fride 223

Edward M. Furness 228

- - -

Second meeting for the Conference in the Matter of Pollution of Lake Superior and Its Tributary Basin in the States of Minnesota, Wisconsin, and Michigan, under the provisions of Section 10 of the Federal Water Pollution Control Act.

- - -

PRESIDING:

Murray Stein, Assistant Commissioner for Enforcement, Environmental Protection Agency, Water Quality Office, Washington, D.C.

- - -

CONFEREES:

Ralph W. Purdy, Executive Secretary, Michigan Water Resources Commission, Lansing, Michigan

Dale Bryson, Director, Lake Superior-Upper Mississippi River Basin Office, Environmental Protection Agency, Water Quality Office, Minneapolis, Minnesota

Francis T. Mayo, Regional Director, Great Lakes Region, Environmental Protection Agency, Water Quality Office, Chicago, Illinois

CONFEREES, Continued:

Thomas G. Frangos, Administrator,
Division of Environmental Protection,
Department of Natural Resources, State
of Wisconsin, Madison, Wisconsin

Donald J. Mackie, Executive Assistant,
Department of Natural Resources, State
of Wisconsin, Madison, Wisconsin

Robert C. Tuveson, Member, Minnesota
Pollution Control Agency, Albert Lea,
Minnesota

John P. Badalich, Executive Director,
Minnesota Pollution Control Agency,
Minneapolis, Minnesota

Dr. Howard A. Andersen, Chairman,
Minnesota Pollution Control Agency,
Minneapolis, Minnesota

- - -

PARTICIPANTS:

The Honorable Wendell Anderson, Governor, State of Minnesota, Minneapolis, Minnesota.

The Honorable Patrick J. Lucey, Governor, State of Wisconsin, Madison, Wisconsin.

PARTICIPANTS, Continued:

The Honorable W. G. Milliken, Governor, State of Michigan, Lansing, Michigan.

The Honorable Philip A. Hart, United States Senator, State of Michigan.

The Honorable Gaylord Nelson, United States Senator, State of Wisconsin.

The Honorable Philip E. Ruppe, United States Representative, State of Michigan.

Robert W. Sharp, Environmental Ecologist, Bureau of Sport Fisheries and Wildlife, Twin Cities, Minnesota.

Ray J. White, Aquatic Biologist, Wisconsin State Council of Trout Unlimited, Madison, Wisconsin.

Charles H. Stoddard, Consultant, Northern Environmental Council, Duluth, Minnesota.

Grant T. Merritt, Minnesota Environmental Control Citizens Association, Minneapolis, Minnesota.

Charles E. Carson, Associate Professor of Geology, MECCA, St. Paul, Minnesota.

Herbert Bergson, President, Save Lake Superior Association, Duluth, Minnesota.

Dale W. Olsen, Duluth Chapter, Izaac Walton League, Duluth, Minnesota.

PARTICIPANTS, Continued:

Robert Roningen, Attorney, Township of Lakewood, Township of Duluth, Duluth, Minnesota.

Bryan Hand, Works Manager, Abex Corporation, AMSCO Division, Two Harbors, Minnesota.

Don Mimette, C.H.O.K.E., Duluth, Minnesota.

John C. Green, Professor of Biology, University of Minnesota, Duluth, Minnesota.

Edward T. Fride, Attorney, of the firm of Sullivan Hanft, Hastings, Fride and O'Brien, 1200 Alworth Building, Duluth, Minnesota.

Edward M. Furness, President, Reserve Mining Company, Duluth, Minnesota.

- - -

ATTENDEES:

David W. Anderson, Biologist
Reserve Mining Co.
Silver Bay, MN

Stanley Anderson
632 N. 60th Ave. W.
Duluth, MN 55807

H. G. Anthony, Chief Engineer
Hibbing Public Utilities
6th Ave. & 19th St.
Hibbing, MN 55746

Barbara Arnold
533 W. Wabasha
Duluth, MN 55803

Nancy Arnold
12C Apartment Village
UMD
Duluth, MN 55812

Jack H. Bailey
U.S. Dept. of Commerce
200 W. Superior St.
Duluth, MN 55802

Joan C. Battistini
550 W. Wabasha
Duluth, MN 55803

Herbert W. Bergson
Save Lake Superior Assn.
3630 Crescent View
Duluth, MN 55804

John P. Bergson
Jack D. Salo, Inc.
15 E. 1st
Duluth, MN 55802

Paul Bjornstad
Contractor
1102 E. 1st St.
Duluth, MN

Bert Borden
City of Fraser
Chisholm, MN 55719

Eugene M. Borgesen, Eng. Supv.
Travelers Insurance Co.
4022 Minnesota Ave.
Duluth, MN 55802

George A. Bourman
Structural Tech., USAF
74th ADMS USAF
Duluth, MN

John F. Bowers, Project Manager
Bureau of Land Management
405 E. Superior St.
Duluth, MN 55802

Ronald Brosdal
National Water Quality Laboratory
13 So. 68th Ave. W.
Duluth, MN

Robert E. Brumder
Governor Lucey's Environmental Aide
State of Wisconsin
Office of the Governor
State Capitol
Madison, WI

Thomas E. Caine
615 N. 16th Ave. E.
Duluth, MN

J. J. Calaman, Product Mgr.
Union Carbide
Box 247
Aurora, MN 55705

Peggy Cannon, Student
Students for Environmental Defense
2920 Ensign Ave.
St. Louis Park, MN 55426

Ken Carlson, Sales Rep.
Arrowhead Brg. Co.
1015 E. Superior St.
Duluth, MN

Robert M. Carlson
Assoc. Prof. of Chemistry
University of Minnesota
Duluth, MN 55812

Dr. Charles E. Carson
Assoc. Prof. Geology
MECCA
26 E. Exchange
St. Paul, MN

Matt Carter
4501 London Road
Duluth, MN

G. M. Christensen, Biochemist
National Water Quality Laboratory
Duluth, MN

Benedict J. Cismowski
Save Lake Superior Assn.
1532 8th Ave. E.
Duluth, MN 55805

Howard P. Clarke
U.S. Steel
700 Missabe Bldg.
Duluth, MN

Casey C. Coban, Sales Mgr.
Duluth Steel Bldgs.
4218 Grand Ave.
Duluth, MN

Don Cole
Babbitt Village
46 Fern [illegible]
Babbitt, MN 55706

Evelyn J. Coleman
National Water Quality Laboratory
107 N. Cascale
Duluth, MN

Charles R. Collier
District Chief
U.S. Geological Survey
Room 1033, Post Office Bldg.
St. Paul, MN 55101

Hampton Connell
Vice Pres. Engineering
Diamond Tool & Horseshoe Co.
4702 Grand Ave.
Duluth, MN 55807

Quincy Dadisman
Reporter, Milwaukee Sentinel
10817 N. San Marino Dr.
Mequon, WI 53092

Robert M. Donny, Coordinator
NWCHH
Box 252
Superior, WI

Louis F. Davis, Attorney
975 Northwestern Bank Bldg.
Minneapolis, MN 55402

Theodore J. Dengler, Principal Engineer
Dept. of Natural Resources
State of Minnesota
Minerals Section
345 Centennial Bldg.
St. Paul, MN 55101

Thomas E. DeWitt
State of Wisconsin
Dept. of Natural Resources
Spooner, WI

Cindy Eckerstrom, Student
SED
4914 Cedar Lake Road
St. Louis Park, MN 55416

Roy Edwards
Box 32, Star Mail Route
Silver Bay, MN

Mrs. Madeline A. Engel
1717 N. 28th St.
Superior, WI 54880

Daniel R. Engstrom, Vice Chairman
Northern Environmental Council
398 Pike Lake
Duluth, MN 55811

Mrs. Daniel Engstrom, Student
Students for Environmental Defense
398 Pike Lake
Duluth, MN 55811

Rev. E. P. Erickson
Minister of Gospel
Assemblies of God
Knife River, MN

Eldon L. Erickson
Northern Environmental Council

Rudy R. Esala
Arrowhead Regional Dev. Commission
900 Alworth Bldg.
Duluth, MN

Glenn L. Evavold, Vice Pres.
PREM, Inc., Consulting Engineers
408 Board of Trade
Duluth, MN

Camille Evenson
Woodland Jr. High School
212 East Arrowhead Road
Duluth, MN

Blaine G. Fenstad
Little Marais, MN 55611

Dale Fetherling
425 Portland Ave. So.
Minneapolis Tribune
Minneapolis, MN

John J. Filipovich
502 Ugstad Road
Proctor, MN 55810

Mrs. John Filipovich
502 Ugstad Road
Duluth, MN 55810

Kevin Flaherty
6025 London Road
C.H.O.K.E.

Edward T. Fride, Attorney
Reserve Mining Co.
1200 Alworth Bldg.
Duluth, MN

Mrs. Howard H. Friese
4130 London Road
Duluth, MN 55804

Raymond Ferzell
City Clerk
Chisholm, MN

Eugene R. Gere, Director
Div. of Waters, Soils & Minerals
Minn. Dept. of Natural Resources
345 Centennial Bldg.
St. Paul, MN 55101

Steven B. Gilbertson, Student
5703 Oakley St.
Duluth, MN 55804

James A. Glasgow, Attorney
U.S. Dept. of Justice
Land & Natural Resources Div.
Washington, D.C. 20530

Carl J. Glavan
Mayor, Village of Aurora
331 South 2nd St. West
Aurora, MN 55705

James J. Golden
Manager TV Sales
KDAL TV
425 W. Superior St.
Duluth, MN 55802

David L. Granquist
801 5th Ave.
Two Harbors, MN 55616

John C. Green
Professor of Geology
Univ. of Minnesota, Duluth
9773 No. Shore Dr.
Duluth, MN 55804

Gerald Groff
Tech. Rep., Calgon Corp.
18 CedarIsland Dr.
Eveleth, MN

Wesley A. Grosh
U.S. Bureau of Mines
Ft. Snelling Federal Bldg.
Twin Cities, MN 55111

Raymond W. Gustafson
City Clerk
City of Two Harbors, MN

Howard T. Hagen, Vice Pres.
Zenith Dredge Company
14th Ave. West and Waterfront
Duluth, Minnesota 55802

Barbara Halligan
National Water Quality Laboratory
4227 Cooke Street
Duluth, Minnesota 55804

Bryan Hand, Works Manager
Abex Corporation, AMSCO Div.
P.O. Box E
Two Harbors, Minnesota 55616

Louis Hanson
Home Secretary to
U.S. Senator Gaylord Nelson
Mellen, Wisconsin

Robert D. Hanson
138 Edison Blvd.
Silver Bay, Minnesota

Thomas M. Hanson, Instructor
University of Minnesota-Duluth
Duluth, Minnesota 55812

Anne Hargrave
1076 - 84 Ave. West
Duluth, Minnesota 55808

Roger J. Hargrave, President
St. Louis County Pollution
Control Council
1076 - 84 Ave. West
Duluth, Minnesota 55808

Arlene I. Harvell
Commissioner, ARDC
1612 Waverly Avenue
Duluth, Minnesota 55803

Gary Harvell
1612 Waverly Avenue
Duluth, Minnesota 55803

Stephen C. Hedman
Izaak Walton League
Wilderness Watch, Inc.
2831 E. First Street
Duluth, Minnesota 55812

Goldie Hein
Beaver Bay, Minnesota

M. Albert Henry
City Attorney
City of Two Harbors
Two Harbors, Minnesota

Gary W. Holcombe
Research Aquatic Biologist
National Water Quality Laboratory
Homecroft Trailer Ct., Lot 67
Superior, Wisconsin

Mrs. James L. Holmer
828 Claymore Street
Duluth, Minnesota

J. R. Holtman
Abex Corporation
Facilities Engineering Dept.
Valley Road
Mahwah, New Jersey 07430

Evelyn P. Hunt, Biologist
EPA
National Water Quality Laboratory
6201 Congdon Blvd.
Duluth, Minnesota 55804

Mr. and Mrs. David Huseby
S.L.S.A.
Box 123
Silver Bay, Minnesota

J. B. Hustad, Geologist
Hallett Minerals Co.
P.O. Box 7024
Duluth, Minnesota 55807

John Ilse
Ilse Engineering (Research)
7177 Arrowhead Road
Duluth, Minnesota

James B. Isackson
Hwy. Engineer
4308 Tioga St.
Duluth, MN 55804

W. E. Jackson
Asst. Director, Envir. Control
U.S. Steel Corp.
525 Wm. Penn Place
Pittsburgh, PA

Donald L. Jacobson
3811 W. 4th St.
Duluth, MN

Axel A. Jensen
Village of Silver Bay
52 Banks Blvd.
Silver Bay, MN 55614

A. W. Johnson
609 No. 41 st. Ave. W.
Duluth, MN 55807

C. G. Johnson
Engr. & Surveyor
Rt. 1, Box 64
Two Harbors, MN 55616

Mrs. Clayton A. Johnson
6770 LaVagne Jct. Road
Duluth, MN 55811

James A. Johnson
Supt. of Sanitary Services
City of Duluth
211 City Hall
Duluth, MN

Miss Bess Karon
1505 E. 4 St.
Duluth, MN 55812

Robert W. Kemler
District Engineer
Federal Highway Administration
461 Rice St.
St. Paul, MN 55103

Mrs. Darrel Kempffer
1707 9th Ave.
Two Harbors, MN

Erick Kendall
Special Assignments Editor
Midland Co-op Publications
739 Johnson St. N.E.
Minneapolis, MN 55413

Kitty Kenney
Cathedral High School
922 Anderson Road
Duluth, MN

Richard Kienitz
Milwaukee Journal
2 W. Mifflin St.
Madison, WI

J.D. Kinkead
Operations Engineer
Ontario Water Resources Commission
135 St. Clair Ave. West
Toronto 195, Ontario, Canada

John R. Klovstad
National Water Quality Laboratory
Duluth, MN

Dr. Rudy G. Koch
Dept. of Biology
Wisconsin State University
Superior, WI 54880

Rev. V.A. Kochendoerfer
Unitarian Church of Duluth
4710 McCulloch
Duluth, MN 55804

Mrs. John R. Kohlbry, LWV
2928 Greysolon Road
Duluth, MN 55812

George Koonce
Minnesota Pollution Control Agency
319 Eighth St. S.E.
Minneapolis, MN

Harold A. Koop, Director
Save Lake Superior Assn.
Two Harbors, MN 55616

Ernest J. Korpela
Wis. State Representative
633 East 3rd
Washburn, WI 54891

Elaine Koski
SEED
Box 490 Mtd. Rte.
Two Harbors, MN

Roger Kurrle
Civil Engineer II
4315 Regent St.
Duluth, MN

John LaForge
Mgr. Station Operations
KDAL, Inc.
Duluth, MN

Richard D. Lange
Biology Teacher
Superior Board of Education
Superior, WI

Noel D. Larson, Hydrologist
U.S. Forest Service
Box 149
Ely, MN 55731

Vernon Larson
Chamber of Commerce
Silver Bay, MN

W.H. Lander
Lake Home Owner
5518 London Road
Duluth, MN

Mrs. W.H. Lander
5518 London Road
Duluth, MN 55804

G. Fred Lee
Prof. of Water Chemistry
University of Wisconsin
Madison, WI 53706

Robert A. Lee
Reserve Mining Co.
Silver Bay, MN

Dr. A. R. LeFeuvre
Environmental Quality Coordinator
Canada Centre for Inland Waters
Box 5050
Burlington, Ontario, Canada

Armond E. Lemke
Res. Aquatic Biologist
National Water Quality Laboratory
Duluth, MN

Edward P. Leone
Save Lake Superior Assn.
22 W. Ideal St.
Duluth, MN 55811

Mr. & Mrs. John Lind
Member, SLSA
Two Harbors, MN 55616

Dean A. Lindberg
Chief Chemist
Continental Oil Co.
Box 8
Wrenshall, MN 55797

Lila A. Lindgren
SLSA
242 W. Austin St.
Duluth, MN 55803

Tina Lindvall
Woodland Jr. High School
1724 East Third St.
Duluth, MN

Clifford E. Lovold
Kings Landing Marina & Committee Member
Minnesota Sportsfishing Lake Superior
Box 427
Beaver Bay, MN

M.D. Lubratovich
National Water Quality Laboratory
Duluth, MN

Jeanne Lundinen
600 Missabe Bldg.
Duluth, MN

Jean McDonald, SLSA
3688 Miller Trunk
Duluth, MN 55811

James M. McKim
Research Aquatic Biologist
National Water Quality Laboratory
Duluth, MN

Wm. H. Magie
Friends of the Wilderness
3515 E. 4th St.
Duluth, MN 55804

Richard Mahal
Mayor, Village of Babbitt
38 Fir Circle
Babbitt, MN 55706

Mr. & Mrs. W.P. Mahoney
Save Lake Superior Assn.
1211 N. 57th Ave. W.
Duluth, MN

Robert S. Mars, Jr.
Vice-Pres., WP&RS Mars Co.
215 South 27th Ave. W.
Duluth, MN

John Mason
Solicitor General
Attorney General
160 State Office Bldg.
St. Paul, MN 55101

Wilfred Matchitt
2626 West 3rd St.
Duluth, MN

Vincent R. Mattson, Biologist
National Water Quality Laboratory
Duluth, MN

Francis T. Mayo, Regional Director
Water Quality Office, EPA
Chicago, IL

Mr. & Mrs. Samuel B. Mayo
Box 770, Route 6
Excelsior, MN

Mrs. Clinton Maxwell
33 Evans Circle
Silver Bay, MN

Mr. & Mrs. H. I. Melby
Voyageurs Marina
23 Floyd Circle
Silver Bay, MN

Alice L. Merritt
Save Lake Superior Assn.
2035 Columbus Ave.
Duluth, MN

Glen J. Merritt
Save Lake Superior Assn.
2035 Columbus Ave.
Duluth, MN

Fred Meyers
219 Gilead St.
Sociology Club, UMD
Duluth, MN

Richard D. Miller
Minnesota Pollution Control Agency
Minneapolis, MN

Wm. C. Miller, Area Engineer
Federal Highway Administration
461 Rice St.
St. Paul, MN 55103

Don Mimette, C.H.O.K.E.
4526 Beverly St.
Duluth, MN

W.K. Montague
409 Alworth Bldg.
Duluth, MN

Daniel D. Murphy
Save Lake Superior Assn.
2720 E. 7th St.
Duluth, MN 55812

Mrs. Leona Nanert
Save Lake Superior Assn.
2332 W. 2nd St.
Duluth, MN

Ronald Nelson
Save Lake Superior Assn.
18 W. Faribault St.
Duluth, MN 55803

Bruce M. Niss
Consultants Assistant
Northern Environmental Council
601 Christie Building
Duluth, MN

Albert L. Nisswandt, M.D.
2029 E. Superior
Duluth, MN 55812

Mrs. Albert Nisswandt
2029 E. Superior
Duluth, MN 55812

Joseph J. O'Connor
Sales Engr., MP&L Co.
30 W. Superior St.
Duluth, MN

Dr. Dale W. Olsen
Duluth Chapt., IWLA
4615 London Road
Duluth, MN 55804

Diane L. Olson
National Water Quality Laboratory
Duluth, MN

Gayle Olson, Chemist
National Water Quality Laboratory
Duluth, MN

Thorvald A. Olson
40th Precinct
2624 W. 3rd St.
Duluth, MN

Wm. G. Opsahl
Vice-Pres., Superwood Corp.
Duluth, MN 55802

Mrs. T.E. Oja
Duluth Council of PTA, Pres.
120 West Mankato St.
Duluth, MN 55803

Mr. Leonard Ojala
824 Claymore St.
Duluth, MN

Candace Quellette
Reporter, Superior Eve, Telegram
1224 Tower Ave.
Superior, WI

Otto Overby
E. Star Rte., Box 77
Two Harbors, MN

Don Palusky
Save Lake Superior Assn,
3016 Branch St.
Duluth, MN

Thomas R. Park
4832 Otsego
Duluth, MN

J. Edward Persall, Mayor
City of Virginia, MN 55792

Glenn E. Pearson
Save Lake Superior - Izaac Walton
802 87th Ave. W.
Duluth, MN

Mrs. R.W. Pearson
Interested homemaker
3400 East First St.
Duluth, MN

Jerrold M. Peterson
Asst. Professor, UMD
209 Snively Road
Duluth, MN

Jory H. Peterson
Associate Editor, Lake Superior News
SLSA
209 Snively Road
Duluth, MN 55803

Ray Polzin
County Agricultural Agent
University of Wisconsin
Court House
Superior, Wisconsin

Skip Porter
Rt. 6 Box 180-D
Duluth, Minnesota 55804

Howard L. Potter
Special Ass't to Federal
  CoChairman
Upper Great Lakes Regional Comm.
Room 504 Christie Bldg.
Duluth, Minnesota

Theodore L. Priebe
Assistant Attorney General
Wisconsin Department of Justice
Capitol Building
Madison, Wisconsin

Frank A. Puglisi, Chemist
National Water Quality Laboratory
Duluth, Minnesota

Ralph W. Purdy
Executive Secretary
Michigan Water Resources
Mason Bldg.
Department of Natural Resources
Lansing, Michigan

Mrs. Janet Pykkonen
419 West Faribault Street
Duluth, Minnesota 55803

Zora Radosevich
3 Vassar Street
Duluth, Minnesota 55803

Robert A. Ragotzkie, Director
Marine Studies Center
University of Wisconsin
1225 West Dayton Street
Madison, Wisconsin 53706

Jim Randall, Attorney
Village of Kinney
402 East Howard
Hibbing, Minnesota

Deloris Roach
Star Rt. Box 50A
Silver Bay, Minnesota

Gene A. Roach, President
Local 5296 USWA
Silver Bay, Minnesota

Donald A. Rock
2020 Hammond Avenue
Superior, Wisconsin

Robert N. Roningen, Attorney
Town of Lakewood
Town of Duluth
816 First American National Bank
Duluth, Minnesota 55802

E. W. Ross
Zoning Administration
Douglas County
Room 103, Court House
Superior, Wisconsin

Leonard L. Rouse, President
Superior Fed. Labor
Sheet Metal Workers
2005 N. 24th Street
Superior, Wisconsin

Earl H. Ruble, President
Earl Ruble and Assoc., Inc.
217 Lake Ave. So.
Duluth, Minnesota 55802

Carlisle P. Runge
Prof. of Law
Univ. of Wisconsin
310 Law School
University of Wisconsin
Madison, Wisconsin 53706

David Rutford, President
RREM, INC.
408 Board of Trade Bldg.
Duluth, Minnesota 55802

Franklin Ryders
Corps of Engineers
1210 U. S. Post Office and
  Custom House
St. Paul, Minnesota 55101

John Safstrom
Sales Engineer
Armco Steel Corp.
631 Leicester Avenue
Duluth, Minnesota

Wilmar L. Salo, Biochemist
UMD, Dept. of Chemistry
Rt. 3 Box 386-1
Duluth, Minnesota 55803

Victor Schmidt
Mill Manager
American Can Co.
Ashland, Wisconsin

Thomas W. Schmucker
Eveleth Fee Office
Box 521
Eveleth, Minnesota 55734

Robert T. Scott
Corporation Manager
Aguar, Jyring, Whitman, Moser, Inc.
126 E. Superior St.
Duluth, Minnesota 55802

Earl R. Seglem
Burlington Northern Railroad
719 W. Tischer Road
Duluth, Minnesota

Robert A. Seitz
Izaak Walton League
4333 Oneida St.
Duluth, MN 55804

Miss Helen Seymour
1925 E. 1 St.
Duluth, MN

A. Lloyd Shannon
County Commissioner - 5th Dist.
St. Louis County
204 Courthouse
Duluth, MN 55802

Robert W. Sharp
Environmental Ecologist
Bureau of Sport Fisheries & Wildlife
Federal Building, Ft. Snelling
Twin Cities, MN

Harold Sims
United Northern Sportsmen

Stanley Sivertson
Sivertson Bros. Fisheries

David N. Skillings
Skillings Mining Review
210 Sellwood Building
Duluth, MN 55802

E.R. Smith
SLSA
1422 E. 1st
Duluth, MN

Mrs. Gilbert G. Smith III, Chemist
National Water Quality Laboratory
Duluth, MN

Wesley E. Smith
Research Aquatic Biologist
National Water Quality Laboratory
Duluth, MN

Claudette Y. Springle
Histological Technician
National Water Quality Laboratory
Duluth, MN

Edward Stack
Wisconsin State Representative
1420 John Ave.
Superior, WI

Fred L. Stanley
4550 West 26th St.
Abex Corp.
Chicago, IL 60623

Anton Sterle, Pres.
United Northern Sportsmen
2418 West 15th St.
Duluth, MN 55806

Charles H. Stoddard
Consultant, Northern Envir. Council
600 Christie Bldg.
Duluth, MN 55802

John R. Suffron
Environmental Control Engineer
White Pine Copper Company
White Pine, MI 49971

John A. Suinkonen, Manager
Eveleth Fee Office
Box 521
Eveleth, MN 55734

Ragnvald Sve
Commercial Fishing & Resort
E. Star Rte., Box 121
Two Harbors, MN

Roy A. Tanner, Adm. Asst.
U.S. Army Corps of Engineers
Lake Superior Area Office
Canal Park
Duluth, MN

John I. Teasley
National Water Quality Laboratory
Duluth, MN

Patricia A. Tew
SEED
Route 1, Box 33
Wrenshall, MN 55797

Richard G. Thompson
202 Parkland
UMD Student
Duluth, MN

Don Ternes
Student
4 No. 17th Ave. East
Duluth, MN

Lois Toffol
337 Mygatt Ave.
Duluth, MN

Anna Tuftner
Interested & Concerned Citizen
Superior, WI 54880

Robert M. Tyo, Research Chemist
National Water Quality Laboratory
Duluth, MN

Kenneth Van Ess
Environmental Health Director
St. Louis County Health Dept.
512 Courthouse
Duluth, MN 55802

Mel Viant
C.C.I. Co.
504 Spruce St.
Ishpeming, MI

Charles Walbridge
National Water Quality Laboratory
Duluth, MN

Clarence Wang
Area Engr.
L.S. Area Ofc. Corps of Engineers
Canal Park, Duluth, MN

L.P. Warriner, Mining Consultant
78 Langdon Avenue
Arosley on Hudson, NY 10503

Dave Watkins
Student, SED
A-316 Griggs Hall, UMD
Duluth, MN

Janice Watkins
Student, SED
100 Washburn Hall
Duluth, MN 55812

Leon W. Weinberger
Consulting Engineer, Reserve Mining
7400 Masters Drive
Potomac, MD 20854

Charles Wm. Westin, Exe. Vice Pres.
Duluth Area Chamber of Commerce
220 Medical Arts
Duluth, MN 55802

Ray J. White, Aquatic Biologist
Wisconsin State Council of Trout Unlimited
2930 Harvard Drive
Madison, WI 53705

Ronald L. Wiegel, Research Associate
Mineral Resources Research Center
Mines Experiment Bldg., U of M
Minneapolis, MN 55455

John Leighton Wilson, Jr., Pres.
UMD Students for Envir. Defense
University of Minnesota
Duluth, MN 55812

Robert G. Woods, Mayor
City of Biwabik
Biwabik, MN 55708

Irwin M. Zebott
3681 Morris Thomas Road
Duluth, MN 55810

George Zeller
U.S. Steel Corp.
Duluth, MN

Herman Zuponcic
Supt. of Utilities
Village of Aurora, MN

David Bergstrom
3819 Crescent View
Duluth, MN

Mary Brascugli
League of Women Voters
1560 6th Ave. N.
St. Cloud, MN

Keith M. Brownell
County Attorney, St. Louis
Court House
Duluth, MN 55802

Floyd J. Carlson
ASCS Douglas Co.
Room 205 Post Office Bldg.
Superior, WI

Kenneth A. Carlson
Manager of Divisions
Minnesota Power & Light Co.
30 W. Superior St.
Duluth, MN 55802

Albert P. Colalillo
Longshoremen - ILA Local #1366
606 Garfield Ave.
Duluth, MN

Mrs. M. Alison Contos, DFL
129 West Anoka St.
Duluth, MN

John Eaton, Res. Aq. Biol.
National Water Quality Laboratory
Duluth, MN

Emil H. Meitzner
Dist. Materials & Soils Eng.
Wisc. Div. of Highways
1517 Tower Ave.
Superior, WI 54880

Milton M. Mattson
S.L.S.A.
Beaver Bay, Minnesota 55601

Ernest Schober
Soil Conservation Service
2205 E. Fifth St.
Duluth, Minnesota 55812

PROCEEDINGS

OPENING STATEMENT

BY

MURRAY STEIN

MR. STEIN: The conference is open.

This Second Session of the Conference in the Matter of Pollution of Lake Superior and its Tributary Basin in the States of Minnesota, Wisconsin, and Michigan has been reconvened under the provisions of Section 10 of the Federal Water Pollution Control Act.

The First Session of this conference was held on May 13 to 15, 1969, and the conferees met in Executive Session on September 30 and October 1, 1969. The Second Session met on April 29 and 30, 1970, and met again on August 12 and 13, 1970.

Both the State and Federal Governments have responsibilities in dealing with water pollution control problems. The Federal Water Pollution Control Act declares that the States have primary rights and responsibilities for taking action to abate and control pollution. Consistent with this, we are charged by law to encourage the States in these activities.

At the same time, the Administrator of the Environmental Protection Agency is charged by law with specific responsibilities in the field of water pollution control in connection with pollution of interstate and navigable waters. The Federal Water Pollution Control Act provides that pollution of interstate or navigable waters which endangers the health or welfare of any persons shall be subject to abatement. This applies whether the matter causing or contributing to the pollution is discharged directly into such waters or reaches such waters after discharge into a tributary.

On December 31, 1970, Administrator Ruckelshaus forwarded the summary of the conference of the previous meetings of the Second Session with the following recommendation to the State of Minnesota:

"I recommend that the Minnesota Pollution Control Agency take appropriate action under its water pollution control program and State and local law to ensure that the recommendations of the conference are carried out. With particular regard to the Reserve Mining Company, I would call attention to the summary of conference of the First Session of the Enforcement Conference on Lake Superior wherein Reserve Mining was to have submitted a report including a tentative timetable for necessary action, and to the schedule for abatement actions for Minnesota in the summary enclosed wherein the completion of treatment facilities for Reserve Mining Company is recorded as 'not specified.' I feel that this special consideration of one polluter must end. Therefore, I recommend that you and the conferees seek submission of final plans by July 1, 1971, and insist on prompt submission of preliminary plans as agreed upon at the conference and recorded as Recommendation No. 4. Failure to accomplish prompt planning and scheduling of corrective action for all polluters via the conference route must result in more stringent enforcement procedures by the Federal Government under appropriate Federal laws."

The purpose of this conference is to bring together the State water pollution control agencies, representatives of the Environmental Protection Agency, and other interested parties to review the existing situation and the progress which has been made, to lay a basis for future action by all parties concerned, and to give the States, localities, and industries an opportunity to take any indicated remedial action under State and local law.

I will defer the statements on the procedures of the conference until a little later in the day. But the Federal law has provided since 1948 that the primary rights and responsibilities for controlling water pollution rests with the States. There are two parts to this: 1) rights -- and we have heard quite a bit about States' rights -- and 2) responsibilities.

I am glad to report today that we have evidence -- certainly concrete evidence -- by all three States of the States exercising these responsibilities. As a tangible result of that, and certainly a real indication of that, we have participation by the Governors of the States, and I would like to first call on Governor Wendell Anderson of Minnesota. Governor Anderson. (Standing ovation)

STATEMENT OF THE HONORABLE WENDELL ANDERSON, GOVERNOR, STATE OF MINNESOTA, MINNEAPOLIS, MINNESOTA

MR. ANDERSON: Members of the conference, ladies and gentlemen.

I was here last year in August and when they introduced me they didn't stand up so I am very pleased that you did.

When I appeared here last August as a private citizen and also as a candidate for Governor, I indicated that, if elected, I would take appropriate action so that my State, Minnesota, would become a formal member of this conference. Upon taking the oath of office some 10 days ago, my first official act was to join this conference. I think that indicates confidence in the members. I think it also indicates the priority the people of Minnesota give to the problems of the environment.

Last August when I was here, I indicated that if the conference found interstate pollution I felt that it would be most appropriate if they would issue a proper order indicating that Reserve Mining would have to provide appropriate facilities onshore, and I also Indicated I felt that a very specific timetable should be adopted. My position is the same today.

I believe that I speak for the vast majority of people of Minnesota when I say that they are going to insist that Reserve Mining provide this type of facility. They will not be satisfied until every company, every municipality is stopped from polluting Lake Superior. They are not antibusiness, and I am not antibusiness. All we are saying -- and we recognize that if any company is required to spend a substantial amount of money on environmental facilities that the cost of the final product will be higher. I think the people of Minnesota and the people of our country are willing to pay more for the final product. It is my hope that the business community will recognize that one very new legitimate cost of doing business in America will be to consider and provide for environmental factors. I recognize that many issues are not black and white; many are in the gray area. And on occasion sound arguments can be made on both sides of the issue.

It is my hope that when you face that kind of a situation if you must err, as we often do err on the side of the environment, make the mistake on the side of public health, I think if you do that, then I think you will continue to have my confidence, and I think you will have the confidence of the people of Minnesota.

Thank you very much.

MR. STEIN: Thank you. (Applause)

Next, we would like to call on Governor Patrick J. Lucey of Wisconsin. Governor Lucey. (Standing ovation)

STATEMENT OF THE HONORABLE PATRICK J.
LUCEY, GOVERNOR, STATE OF WISCONSIN,
MADISON, WISCONSIN

Hon. P. Lucey

MR. LUCEY: Mr. Chairman, Governor Anderson, conferees, ladies and gentlemen.

As you know, representatives from the State of Wisconsin have attended all the sessions of the Lake Superior Enforcement Conference. There has been some misunderstanding, however, about the extent of Wisconsin's commitment to the conference. Now that I have assumed office, I would like to clarify Wisconsin's position.

Like Governor Anderson and Governor Milliken, I commit my administration to the objectives of this conference. The State of Wisconsin will be a full party and participating member. My administration will do everything possible to see that the communities and industries of Wisconsin install pollution abatement facilities on or before the deadlines established. I can assure you that the recommendations set forth by the expert research capabilities of this conference will not fall on deaf ears.

Governor Anderson and I are appearing together as a demonstration of our dual interest in maintaining Lake Superior as the most valuable freshwater resource in this country. We have strong support for our positions from Governor Milliken of Michigan. In his wire to me he said, "... no other matter is more critical in this decade." Mr. Chairman, we must not allow this irreplaceable resource to fall victim to misdirected interests.

This proceeding is unique, or very nearly so, for here the States of Minnesota, Michigan, and Wisconsin, the Federal Government, private interest groups, and the general public are attempting to preserve a great resource, Lake Superior, before the effects of abuse become readily apparent.

Lake Superior is today a lake of comparative purity, but this is a compliment to no one. Its special geographic location and geologic structure together with its massive size have saved it and allowed it to maintain its high quality despite some unthinkable forms of despoilation. Because of its size, any damage that will occur could last for a millennium. I reject the notion that a discharge must be proved damaging to the environment and a danger to public health before it is altered or stopped altogether. With Lake Superior this is not an academic question. (Applause) It is essential, it is critical that this conference take bold steps to assure that Lake Superior be preserved. No halfway measures should be adopted by the officials here.

It is my contention that the burden should fall on all those who intend to use our waters to ensure that no harm will occur to them. I commend the conferees for their actions in regard to the Reserve Mining Company's operations which at this very moment pose a serious threat to the delicate ecological balance of Lake Superior. The conditions now existing as a result of this large taconite mining operation must be corrected and there must also be a firm declaration that no repetition of this disposal technique will ever be permitted to occur again in Lake Superior.

In Wisconsin, as in the other States, the record has not been encouraging. Our municipalities did not meet the deadlines established for the provision of secondary sewage treatment plants, as required. These delinquent cases are now being referred to the Attorney General for further legal action. Working closely with the Attorney General and the Department of Natural Resources, my administration will assist and encourage pollution abatement programs now being developed by those communities in the Lake Superior Drainage Basin. I will recommend to the next session of the Wisconsin legislature a bill proposing that all industries be required to install pollution monitoring equipment and submit a periodic report of the quantity and type of all pollutants. The Department of Natural Resources will verify the reports through periodic monitoring of industrial wastes.

Like Governor Anderson, I consider the Regional Sewage Plan by the Northeast Minnesota Development Association to be a significant accomplishment. I, too, will strive to ensure that the necessary steps are taken in Wisconsin to enable creation of the Sewage District.

Mr. Chairman, there are several other areas where I think Wisconsin can provide direction in assuring that this proceeding will accomplish its objectives. Erosion of red clay along the south shore of Lake Superior is a longstanding problem. But it is one that can be dealt with. To this end, I will see that the recommendations of the Red Clay Interagency Committee are put into effect for controlling high amounts of turbidity in the south shore region. In addition, I will ensure that the actions of the State highway and agriculture agencies reflect the recommendation to control soil erosion set forth by the committee.

There is one other area, Mr. Chairman, about which I am deeply concerned: the enormous amount of waste that is discharged by the many ships that use the waters of Lake Superior. Specifically, it seems to me that the Federal response to this problem is not a sufficient solution. The recommendation by Federal authorities that chlorinator-macerators be installed in these vessels to treat their wastes is an inferior approach. I urge the conference to reject this recommendation in favor of an order requiring all vessels to hold all wastes on board until they reach port, where wastes can be pumped out and treated before disposal.

Mr. Chairman, the future of this lake is before you and the conferees assembled here today. I urge you to pay special attention to a report received earlier by this conference which stated that Lake Superior is "... a delicate lake and, therefore, great caution must be exercised when weighing the potential dangers to its ecology."

Of the 51 enforcement conferences that have been convened throughout the country almost every one has been called to undo pollution wrought by carelessness with our technology and gross disrespect for delicate ecosystems. Rivers are muddied with silt and filth and lakes are choking with over-enrichment. I sincerely hope that the time is not too late to reenlist the ethic which calls for a communion with nature rather than a consortium against it.

In his inaugural address, Governor Anderson repeated a wise truth with which I fully concur. He said, "If we are too cautious, too careful, let it be caution and concern for our natural resources."

Thank you very much.

MR. STEIN: Thank you, Governor Lucey. (Applause)

Governor, it is rare that I would make a comment right after a Governor's statement, but I think you raised a question here about macerator-chlorinators. I don't know what Federal authorities -- and there may be some who have proposed this -- but I will say this for this Federal authority and for this conference: I don't think macerator-chlorinators are appropriate for the lakes, and we have stated so. We have stated so in this conference. The conferees have stated so in the conference on Lake Michigan and on Lake Erie.

I fully agree with your suggestion that we have to have holding tanks and proper disposal, and I don't know what the ultimate judgment is going to be, but I would like to put myself on the record here that for this Federal representative I am in complete accord with your statement.

MR. LUCEY: Thank you.

MR. STEIN: Thank you very much.

May we call on Mr. Purdy for a statement from Governor Milliken?

Mr. Purdy.

Hon. W. G. Milliken

MR. PURDY: Thank you, Mr. Stein.

I would like to read a telegram from Governor Milliken to William D. Ruckelshaus, Director of the Environmental Protection Agency; to the Honorable Patrick J. Lucey, the Governor of Wisconsin; the Honorable Wendell R. Anderson, the Governor of Minnesota; and Murray Stein, Conference Chairman:

"Because of my constitutional commitment to present the State of the State Message on Michigan on Thursday, January 14, I regret that I will not be able to join you at the Lake Superior Enforcement Conference. I have asked Ralph Purdy, Executive Secretary of the Michigan Water Resources Commission, to represent Michigan at the conference. However, I look forward to working with Wisconsin and Minnesota on solving Great Lakes problems. My administration and all of Michigan government continue to place the highest priority on programs to protect and enhance the environment. No other matter is more critical in this decade. I have directed the Michigan Water Resources Commission to pursue vigorous enforcement of all necessary pollution control measures throughout the State including the Lake Superior Basin. My full support is with the actions you will take for the protection of that magnificent lake. Michigan will be a full party and participating member of the conference. I would urge that definitive action programs be developed for any unresolved problems which contribute to the pollution of Lake Superior, and that full correction take place as rapidly as possible.

"To assure the other Lake Superior States that all programs in the Lake Superior Basin are proceeding on a mutually compatible basis, I invite the Water Quality Office of the Environmental Protection Agency to join with the State of Michigan in continuing a close surveillance with regard to corrective measures to protect Lake Superior."

Signed by Governor William D. Milliken, State of Michigan. (Applause)

MR. STEIN: And I have a few telegrams I would like to read at this point.

"It is my understanding that the Lake Superior Enforcement Conference will reconvene on January 14 to consider the disposal of taconite wastes into Lake Superior by the Reserve Mining Company. Further, I understand that the Refuse Act permit to the Reserve Mining Company has now expired and an excellent opportunity is presented for prompt enforcement of abatement action. I urge vigorous action by FWQA to prevent the further unwarranted pollution of Lake Superior."

Signed Philip A. Hart, J. S. Senator.

Hon. P. Lucey

We have a telegram here asking that "State and Federal Government will move expeditiously to ensure that Lake Superior's high quality will be protected from degradation by every source, whether it be massive taconite wastes from the Reserve Mining Company, pollution from municipalities and other industries within the lake's basin, or discharges from ships and watercraft. It is our urgent wish that the purest of the Great Lakes can be made a symbol of man's realization of the high worth of a quality environment."

This is signed Senator Gaylord Nelson, Representative John Blatnik, Senator Walter Mondale, Senator Hubert Humphrey, Senator William Proxmire, and Senator Philip Hart.

We also have a letter from Governor Patrick J. Lucey. We have heard his statement, and without objection I suggest we put the letter in the record as if read, unless Wisconsin wants to do that. But I think the Governor has made his statement already and this is repetitious.

(The letter mentioned above follows as if read.)

"Hon. William Ruckelshaus, Environmental Protection Agency, Executive Office Building, 1600 Pennsylvania Avenue, N.W., Washington, D.C. 20006, January 12, 1971.

Hon. P. Lucey

"Dear Mr. Ruckelshaus:

"As you know, representatives from the State of Wisconsin have been attending the Lake Superior Pollution Enforcement Conference. There has been some misunderstanding in our State, however, to the extent of Wisconsin's commitment to the conference. Now that I have assumed office, I would like to clarify Wisconsin's position. As of this date, the State of Wisconsin is willing to be a party to and a fully participating member of the Lake Superior Pollution Enforcement Conference.

"This administration is in complete support of all the pollution abatement orders and recommendations issued by the conference.

"Lake Superior is this country's most valuable freshwater resource. Its future can only be guaranteed by positive and protective action now. I feel the opportunity for such action is best achieved by cooperative effort between the participating States and the Federal Government. Further, vigorous enforcement by State governments can compliment the efforts of the conference. Let me assure you that such vigorous enforcement will come from this administration.

"As an official participant in the Lake Superior Enforcement Conference, the State of Wisconsin is prepared to meet its commitment to preserve Lake Superior in the best possible condition as a natural heritage for future generations. Throughout my term as Governor, I plan to enforce strict deadlines for the abatement of pollution from Wisconsin municipalities and industries. In the event that these deadlines are not adhered to, I will refer the cases to the Attorney General of Wisconsin for legal action, encouraging him to pursue the cases with the greatest possible diligence.

"We will also do everything we can to assist our communities in constructing abatement and treatment facilities. In this regard, I urge you to make the maximum amount of funds available to our State and its communities for the building of these facilities.

"As a member of the Lake Superior Enforcement Conference, the State of Wisconsin will work in partnership with your efforts in the Environmental Protection Agency to save Lake Superior from the fate of Lake Erie and the other Great Lakes.

"Sincerely, Patrick J. Lucey, Governor of Wisconsin."

MR. STEIN: We also have a telegram from Governor Milliken which you have heard in large measure, and we will put this in the record, Mr. Purdy, and let Mr. Purdy have it in case he wants any extra material in on that.

We have a statement from Philip E. Ruppe, Member of the Congress, who sent us a letter. He would appreciate having his statement read and made a part of the record, and in accordance with his wish, we will read the statement.

I know we have a telegram here from Senator Nelson, but I wonder if Mrs. Piere or someone can come up and go through these and see if we can possibly find that because I would like to put this in the record at this time. But in the meantime I will read Philip E. Ruppe's statement.

"The fact that this conference is being conducted in Duluth today is evidence of Federal and State interest in maintaining the integrity of Lake Superior. I am most pleased that Mr. Ruckelshaus, Administrator of the newly created Environmental Protection Agency, has reconvened this meeting, and I want to make it clear from the outset that I fully support the concept that underlies the Enforcement Conference. It presents us with the opportunity of developing a coordinated, overall attack that may, if we are successful, prevent the ruination of the largest, deepest, and purest body of freshwater in the world, Lake Superior.

"While this conference is concerned with the total problem of pollution in Lake Superior, and that is as it should be, I am going to direct my remarks today to the specific question relating to pollution resulting from Reserve Mining Company's operations at Silver Bay, Minnesota. In my view, this is the major difficulty facing the conference at this time.

"I intend to keep this statement brief so that the thrust of my message is not lost. Further, I do not intend to go into technical considerations because they have been presented to you in some detail during two previous sessions. Suffice to say that, in my view, the 60,000 tons of taconite tailings that have been daily dumped into the lake over the last 20 years constitute a pollution hazard. This conference has, in fact, concurred in that evaluation, and the major question remaining is when will Reserve Mining Company submit and carry out an acceptable plan for altering its methods of disposing of these harmful wastes?

"The record to date is not encouraging. The First Session, which convened in the spring and fall of 1969, concluded that the taconite tailings from Reserve Mining Company have a deleterious effect on the ecology of the lake by reducing organisms necessary to support fish life. Reserve Mining was directed to undertake engineering and economic studies of methods for reducing the harmful effects of discharging the tailings, and was requested to submit a report to the conferees within 6 months. That report was specifically to include a tentative timetable for necessary action. Nearly 10 months have passed since that report was to have been submitted.

"Because of my concern over the inaction, I directed a letter to the Secretary of the Interior in April of 1970 and proposed that Reserve be given one year to complete final plans and begin construction of a pollution control facility. On June 1, I received a letter from Federal Water Quality Administrator David Dominick which stated, 'Reserve Mining is to submit to the conference by July 26, 1970, plans or a series of alternatives to prevent pollution of Lake Superior. These plans,' he wrote, 'as submitted by Reserve Mining Company, are to be ready for detailed engineering.' An official summary of the first meeting of the Second Session also stated that plans would be submitted by Reserve on July 26.

"That second deadline came and passed and, to my knowledge, no plans were submitted. The second meeting of the Second Session convened in August, and I was understandably surprised when no mention was made of the July 26 deadline. Instead, the conference established a third deadline, and directed Reserve Mining Company to submit preliminary plans by December 1, 1970. That deadline has now passed and I am informed that no plan has been submitted as of this date.

"I am assuming that at this session, the long-overdue pollution abatement plan, ready for detailed engineering, will be presented. You can be sure that my staff and I will carefully review the proposal with senior officials of the Environmental Protection Agency.

"I am expecting to see three very important results emerge from the Third Session of the Federal-State Lake Superior Enforcement Conference:

"First, I expect a meaningful step to be taken in the protection of Lake Superior.

"Second, I expect the conferees to demonstrate that delay and obfuscation will not be tolerated in affairs dealing with the integrity of our environment; and we are willing to take the necessary steps to protect resources that are currently in a relatively pure state, rather than waiting until those resources are defiled and ruined. The cost of protection is minimal when compared to the hundreds of millions of taxpayers' dollars that must be expended in attempting to restore a lost resource.

"Third, I expect the Environmental Protection Agency, now in its infancy, to use this occasion to build public confidence by boldly demonstrating a no-nonsense approach to the question of Reserve Mining Company in its pollution of Lake Superior. The activities of EPA at this conference will be under careful scrutiny both by the Congress and by the people of the Nation.

"Thus, a great deal is riding on the outcome of this conference. It is clear that Reserve has had adequate time for the preparation of abatement plans. If there is not to be a crisis of confidence in the ability and motivation of EPA and the other Federal and State organizations involved, then now is the time for action."

We also have several other communications which will be put into the record when there is an appropriate time. But I do know that we have a telegram on the way -- and I am asked to mention this -- from Senators Nelson, Mondale, Humphrey, Proxmire, Hart and Griffin; and Congressman Blatnik. All of them have signed this joint telegram and, as sometimes happens, it has not yet been received, but as soon as it is we will put it in the record at this point, with the permission of the conferees, as if read. (The above mentioned telegram follows.)

Telegram to: January 14, 1971

Murray Stein
Lake Superior Enforcement Conference

Mr. Stein

Governor Anderson of Minnesota, Governor Lucey of Wisconsin and Governor Milliken of Michigan are to be commended for asserting positive leadership in the early days of their new administration; by making their States formal parties to the Lake Superior Enforcement Conference. It is this type of leadership that is needed by the States to confront the awesome challenge wrought by the forces of environmental abuse. If there ever was doubt about the legality of the conference to order abatement of all sources of pollution of Lake Superior, it has been dispelled by the actions of the three governors. It is our sincere hope that the conference, which now representa a partnership of Federal and State Governments, will move expediciously to insure that Lake Superior's high quality will be protected from degradation by every source--whether it be massive taconite wastes from the Reserve Mining Company, pollution from municipalities and other industries within the Lake's Basin, or discharges from ships and water craft. It is our urgent wish that the purest of the Great Lakes can be made a symbol of man's realization of the high worth of a quality environment.

Sincerely,

Senator Gaylord Nelson,
Representative John Blatnik,
Senator Walter Mondale,
Senator Hubert Humphrey
Senator William Proxmire,
Senator Philip Hart,
Senator Robert Griffin

Now, I would like to ask the conferees to introduce themselves. May we start at the left end of the table, please?

DR. ANDERSEN: I am Howard Andersen, Chairman of the Minnesota Pollution Control Agency.

MR. BADALICH: John Badalich, Executive Director of the Minnesota Pollution Control Agency.

MR. TUVESON: Robert Tuveson, Minnesota Pollution Control Agency.

MR. MACKIE: Donald Mackie, Assistant Secretary, Wisconsin Department of Natural Resources.

MR. FRANGOS: Thomas Frangos, Department of Natural Resources, Wisconsin.

MR. PURDY: Ralph Purdy, Executive Secretary, Michigan Water Resources Commission.

MR. BRYSON: Dale Bryson, Environmental Protection Agency.

MR. MAYO: Francis Mayo, Regional Director, Region 5, Water Quality Office, Environmental Protection Agency.

MR. STEIN: Murray Stein, Environmental Protection Agency; namely, representative of Administrator Ruckelshaus.

Now, as in previous conferences, we will call upon people who have indicated that they wish to make statements. We are also going to allow the States to manage their own time with some of the people. What we would like to do, in view of the large interest here, is try to get the testimony or statements from the people who have come up here on their own time to make statements, if there are any such statements to be made.

Now, I would like to ask several things. We have been through this situation many, many times. You would agree with all three Governors, and with the congressional interest in this, that we are dealing with one of the most important problems in the country, as far as the protection of the environment goes, and I know you people are thinking in terms of Lake Superior. Certainly some of you may have heard me talk on this before, but let me be very brief to put this in perspective.

The Great Lakes are the greatest single freshwater resource in the free world -- probably the entire world -- but certainly in the free world. The miracle of the Great Lakes is that they have remained fresh. We know that lakes, subject to the impact of civilizations through the ages, have become deteriorated. They became eutrophic and they go downhill and they are not what they were. You check the Middle East lakes, the European lakes, and the evidence is abundant. The evidence is abundant here, too, in the condition of Lake Erie, in the condition of Lake Ontario, in the problem that we are having in Lake Michigan where we have a lake of somewhat better quality. But we have a marginal situation where every time we are talking about putting another discharge in, we are wondering if we are not going to upset the balance. And after we have had a multi-multimillion dollar program for industrial and municipal waste treatment, we find that the improvement in water quality, because of the complexity of the problem and the vast amounts of water concerned and the years of neglect, is proceeding at a snail's pace, and we have to take years of careful testing before we even see a glimmer of improvement.

We also recognize that Lake Superior is probably in the best shape of any of these lakes, and we are going to keep it so. We, I think, are all committed to providing adequate treatment and satisfactory treatment at the source by all polluters, by all dischargers, by all potential polluters, whether they be municipalities, industries, or boats, or any other source.

I think the conferees are committed to that kind of program. Not only are the conferees committed to it, but I think your congressional delegation and your Governors are committed to it. So I would ask that if we are having any participants in the conference that they recognize this commitment on the part of the conferees, on the part certainly of the State governments, on the part of the congressional delegation.

But in order to make something work, you have to come up with answers or a program for certain specific problems. And I think at this meeting we have indicated to the conferees we would like to concentrate on the Reserve Mining problem. This doesn't mean that Reserve Mining is the only problem in the lake, but we would like to do that.

In addition to that, I think we have -- as the Governor of Wisconsin has brought up -- this red clay problem, and we will be glad to consider that.

Now, I don't think we want to foreclose anyone else who thinks he has a problem that should be called to the attention of the conferees, and we are going to hear everyone out. But I would like to ask the participants to be brief and direct themselves to specifics because, again, I believe you have heard in all these preliminary remarks the key question. I am just talking in terms of priority for our getting on with the immediate problem of preserving the water quality in Lake Superior, the key issue is the resolution of the Reserve

Mining situation.

The floor is open, as you know, and we will give it to you. Any consideration we have which is going to get us away from that will have prime consideration by the conferees.

I ask for your good faith, and I ask for your indulgence on that in the question of priorities here so you can enable us to proceed in an orderly way.

For example, I suspect we are not going to have reports from the States on complete industrial and municipal progress throughout the States at this meeting. As you know, we have been scheduling those regularly. We will schedule one again in the near future, and all of the records of all of these States and the Federal Government are in the open. We believe that we are public agencies doing the public business in a public manner, so you know what is going on.

But I ask, for this meeting, that we try if we possibly can -- unless you feel there are some other problems -- try to be brief, and remember that first we want to see if we can come to grips with the Reserve problem. After we are through with that, if the conferees want to bring up this red clay problem, we will be glad to take that up.

With that, I would like to call a recess for 10 minutes so I can get the requests of the people: 1) We will have the statements of anyone who wants to make a statement, with questions and comments by the conferees, 2) then we will call on the Federal Government and the States for any statements which you wish to make. As the home State, we will call on Minnesota last and Minnesota will be calling on Reserve Mining for its statement.

I would like for you to rethink your statements and let's take this recess and find out when we reconvene whether we can proceed expeditiously. We stand recessed for 10 minutes.

(Short recess.)

MR. STEIN: Let's reconvene.

I hope we have everyone who wants to make a statement, but if we don't, here is how we have decided to do this: We are going to allow the States and the Federal Government to manage their own time. You pick the jurisdiction you are from and see Mr. Purdy from Michigan, or Mr. Frangos or Mr. Mackie from Wisconsin, or Mr. Badalich from Minnesota, or any Federal people should see Mr. Mayo. We will call on the people in this order: First we will call on the Federal people, then on Michigan, then Wisconsin, and then Minnesota, and we will be able to get all this material in.

Now, after the statements, as you know, the conferees will have the privilege of making comments or asking questions. We do not entertain questions or comments from the floor because we would be here a very long time if we did that. But if you feel you have anything to say, just register and you will be given a full opportunity.

I would like to put this other material in the record now. We have a telegram from John Ryan, the President of the Calumet Laurium Keweenaw Chamber of Commerce which, without objection we would like to put in the record as if read.

(The above-mentioned telegram follows.)

"The Calumet Laurium Keweenaw Chamber of Commerce decries the pollution of the waters and shores of Lake Superior and takes this means of backing your agency in its efforts to control the further pollution by industries, municipalities and vessels. Your efforts in controlling this pollution are greatly appreciated."

Signed, "John Ryan, President."

MR. STEIN: A telegram from the League of Women Voters; a telegram from Mr. and Mrs. D. W. Hubbard from Hancock, Michigan; a telegram from William H.

Stephens, President, the Village of Laurium; a telegram from Robert T. and Viola Brown, Professor of Ecology, Michigan Technical University; a letter from Dr. and Mrs. J. M. Skaates, Hancock, Michign; a letter from the Environmental Quality Committee of the League of Women Voters of the Escanaba, Michigan area, Lorna Benson, Florence Britton, Dorrine Anderson; a letter from Mrs. D. W. Hubbard at Hancock, Michigan; a letter from Mrs. Jerry Bell in Sault Sainte Marie, Michigan; and another letter from Mrs. Hubbard at Hancock, Michigan; and a letter from Mrs. M. A. Syfers, President, League of Women Voters, Sault Sainte Marie, Michigan.

All these will be included in the record as if read, without objection, and certainly carefully considered by the conferees.

(The above-mentioned communications follow, as if read.)

"Immediate conference action is needed to stop all dumping by the Reserve Mining Company of Silver Bay, Minnesota. Reserve has already been granted additional time to perfect procedures now in use by all other taconite companies. Save Lake Superior from further pollution. Require immediate on-land disposal for all taconite tailings." The League of Women Voters of the Copper

Country, Houghton, Michigan.

"Today, yesterday and every day for the past 13 years Reserve Mining Company of Silver Bay, Minnesota has dumped fine taconite tailings containing 30 tons of phosphorus, 4-1/2 tons of chromium, 3 tons of copper, 3 tons of lead, 1 ton each of nickel and zinc, and 375 tons of manganese. Every 12 days Reserve has dumped enough sediment into Lake Superior to equal as much as all tributaries contribute in a year. Stop further abuse of Lake Superior. Stop Reserve from all dumping after January 15, 1971." Mr. and Mrs. D. W. Hubbard, Hancock, Michigan.

"The Village of Laurium supports your efforts to stop all pollution of Lake Superior at once and wish you success at the conference." William H. Stephens, President.

"Halt waste discharge into Lake Superior. Resettle people if necessary. Value of lake as water resource far exceeds value as sewer. Preservation of quality transcends mundane activity such as Reserve taconite dumping or ship bilge pumping. Stop Reserve and work on others. Do not allow contemplated new mining operations." Robert T. and Viola Brown, Professor of Ecology, Michigan Technological University.

"Dear Mr. Ruckelshaus:

"We wish to take this opportunity to thank you for reconvening the Lake Superior Enforcement Conference.

"We strongly urge you to do everything in your power to force the companies, that are presently continuing to pollute Lake Superior, to stop. We wish to preserve this beautiful body of water for our children (ages 5 months and 2-1/2) and for their future children.

"Sincerely yours, Dr. and Mrs. J. M. Skaates."

"Dear Mr. Ruckelshaus:

"As Chairman of the Environmental Quality Committee for the League of Women Voters of the Escanaba, Michigan area, I and my committee members would greatly appreciate action on your part to halt all dumpings of taconite tailings into Lake Superior from the Reserve Mining Company of Silver Bay, Minnesota, immediately.

"According to George Laycock's article in the May 1970 Audubon, 'Call It Lake Inferior,' Reserve has been dumping 60,000 tons of taconite tailings daily for 13 years. These tailings bring on serious algae growth, increased turbidity for 18 miles from the discharge point, diminished amounts of fish food, and death in the rainbow trout sac fry, among other things.

"Lake Superior is the last of the Great Lakes which has a chance of remaining relatively clean.

"Thank you for your anticipated action regarding this matter.

"Sincerely, Lorna Benson, Florence Britton, Dorrine Anderson, Escanaba League of Women Voters."

"Dear Mr. Ruckelshaus:

"May I thank and commend you on your recent action reconvening the Lake Superior Enforcement Conference to reconsider the pollution abatement plans of the Reserve Mining Company. People in this area are deeply concerned about the tremendous amount of fine metallic material that has been dumped daily by Reserve for the past 13 years. Currents from Silver Bay come to the Keweenaw Peninsula and certainly if Lake Superior becomes algae-filled and impure there is no hope for Lake Michigan or the other Great Lakes. The Minnesota Court has shown that it will take no action and the time is past for delay, study upon study, and reduction of amount. All pollution by Reserve should be stopped January 15th, 1971.

"Sincerely yours, Karen Hubbard (Mrs. Davis W.)"

"Dear Sirs:

"I am writing to ask that you insist that the Reserve Mining Company stop dumping their unwanted taconite tailings into Lake Superior completely and at once. It has been known since the Department of Interior's paper known as the 'Stoddard Report' came out in December 1968 that the mining company is definitely polluting Lake Superior. Yet nothing has really been done to stop them. The company has continued to dump daily 60,000 tons of fine taconite particles into Lake Superior.

"All other taconite plants on Lake Superior already use alternate waste disposal methods so no new technology is needed.

"I trust that you will do what needs to be done and that is: have the Reserve Mining Company stop dumping completely and at once.

"Sincerely, Mrs. Jerry Bell, Environmental Quality Chairman, League of Women Voters."

"Gentlemen:

"Pollution of Lake Superior by the Reserve Mining Company should have been stopped after the Stoddard Report showed indications of decay and enrichment. Further delay will be a criminal abuse of a magnificent natural heritage. One company will gain a small profit by more delays and studies and the millions of people in the Great Lakes area will suffer. A pure great lake can never be recovered. Can these fine metallic particles ever be taken out? Can an 'I'm sorry' by the company (or the conference) two or five or ten years from now ever repay for lost grandeur?

Communications

"All dumping into Lake Superior by the Reserve Mining Company should stop January 15th, 1971.

"Sincerely yours, Karen Hubbard (Mrs. Davis W.)"

"Gentlemen:

"The League of Women Voters of Sault Sainte Marie and Les Cheneau area urge you to take immediate action in seeing to it all companies emptying pollution into Lake Superior be stopped.

"Particularly we urge action be taken against Reserve Mining Company who are dumping 'taconite' tailings into Lake Superior at an alarming rate. We understand all the other mining companies have complied with the law in this respect. Reserve Mining Company should not be an exception.

"Please act.

"Yours truly, Mrs. M. A. Syfers, President, League of Women Voters, Sault Sainte Marie, Michigan."

MR. STEIN: At this point, we would like to call on Mr. Mayo for any Federal presentation.

Mr. Mayo.

MR. MAYO: We have one Federal presentation, Mr. Chairman, a presentation by Mr. Robert W. Sharp, the Staff Environmental Ecologist for the Bureau of Sport Fisheries and Wildlife, Department of Interior, Twin

Cities.

Mr. Sharp.

STATEMENT OF ROBERT W. SHARP, ENVIRONMENTAL ECOLOGIST, BUREAU OF SPORT FISHERIES AND WILDLIFE, TWIN CITIES, MINNESOTA

MR. SHARP: Chairman Stein, conferees, ladies and gentlemen. My name is Robert W. Sharp of the Bureau of Sport Fisheries and Wildlife, Department of Interior.

I would like to submit for the record and to supplement the earlier testimony of the Bureau a report entitled "Fish and Wildlife as Related to Water Quality of the Lake Superior Basin."

This is a detailed report on fish and wildlife resources. It is a joint submission of the Bureau of Sport Fisheries and Wildlife and the Bureau of Commercial Fisheries now known as the National Marine Fisheries Service.

The duties of this agency on the Great Lakes have been taken over by the Bureau of Sport Fisheries and Wildlife as of July 1, 1970. The report is prepared under the authority of the Fish and Wildlife Coordination Act of 1948.

Mr. Chairman, with your permission, I will submit it for the record.

MR. STEIN: This report will be submitted for the record as an exhibit, and it will be available in the offices of the Regional Office, and at Headquarters of EPA during normal business hours, and be made a part of the record.

However, I think in view of the extensiveness of the report and certainly the justifiably proprietary interest that you should have in it, we will let you make the distribution of this through its normal channels. We will be happy to assist if you wish in any way, but this is your report, and it should be considered as such.

MR. SHARP: I would like to say, Mr. Chairman, that additional copies are available in modest numbers from our Twin City offices of the Bureau of Sport Fisheries and Wildlife.

Thank you, Mr. Chairman.

MR. STEIN: Thank you very much, and I really appreciate this report, because it certainly looks very good, and is extensive and thorough, and it is the kind of information that I think has been needed for a long time and we certainly appreciate having it.

MR. SHARP: Thank you, Mr. Chairman.

(Above mentioned--Exhibit #1 is on file at Headquarters, EPA and Region V.)

MR. STEIN: Thank you very much.

MR. MAYO: Mr. Chairman, there are no other Federal presentations at this time. However, I would like to advise you and the conferees that this morning we have received from the Bureau of Outdoor Recreation, Department of Interior, our initial copy of a report entitled "Water Oriented Outdoor Recreation in the Lake Superior Basin." The report was prepared for the Federal Water Quality Administration then in the Department of Interior.

I would like to submit a copy of the report as an exhibit for the record, and we will arrange to provide the conferees with copies of the report at the earliest possible date.

I presume that copies can be obtained by other parties by writing directly to the Bureau of Outdoor Recreation, Lake Central Region, Ann Arbor, Michigan.

MR. STEIN: May I have that? We will make that an exhibit, too, for the conference, and make this part of the record. However, this will not be -- and I want to emphasize this -- these are rather big reports made by other agencies and they will not be reproduced as part of the record.

Now, sometimes there is a little misunderstanding in this, and let me explain why we do this. We generally put material in the record which is not available anywhere else. But when material comes out which is part of a regular publication -- it is a regular publication of another agency -- State, Federal, university, or in a magazine or something of that kind -- and is made available through the normal channels for distribution, and placed in scientific libraries, we do not republish this in the record. We just make it an exhibit because if you get the reference to this you can go to any library or the organization that put the report out and get a copy for you to look at.

With that, that will be made an exhibit.

(The above-mentioned Exhibit #2 is on file Hq. EPA and Regional Offices, Chicago, Illinois.)

Mr. Mayo.

MR. MAYO: We have no further comment, Mr. Chairman, at this time.

MR. STEIN: May we go to Michigan, Mr. Purdy?

MR. PURDY: Mr. Stein, I had informed you earlier that Michigan would not have a statement, but I very seldom keep a promise like that, not to say something.

At the last conference, recommendations were made that the State should adopt new water quality standards for the open waters of Lake Superior. Now that the summary has been issued by Mr. Ruckelshaus confirming the recommendations of the conferees at that last session, we expect to move forward on that at an early date. Also in the summary under Michigan municipalities it noted that there was a completion of secondary treatment requirement for Laurium, Michigan, of December of 1970. This project is not yet under construction. Bids were taken. The contractor has agreed to hold his contract bids until February 15, 1971. There has been some delay here in finalizing the contract with the contractor due to a delay in review of some unusual matters that relate to this project in the construction grant program. But grant offers, I think, will be made very shortly, if they have not already been made by the Chicago office, and we in turn at the State level will provide a State grant.

This is a rather small project. The construction period in the contract document is 180 days, 6 months, so we expect that project to move forward this coming summer, and to be completed in the year 1971. I should point out that Laurium is under a court order of the State of Michigan to proceed.

MR. STEIN: Are there any comments or questions on that?

MR. MAYO: As I understand at least part of the situation, Mr. Purdy, the sewage treatment facilities at Laurium are privately owned at the present time.

MR. PURDY: The sewer system that will be constructed here will discharge to sewage treatment facilities that are already in operation for Calumet.

MR. MAYO: I see.

MR. PURDY: And this system has been in operation for some 80 years -- the soil absorption system -- and is owned by a private utility, and this has created some problems.

MR. STEIN: All right.

Again, without going into detail, unless you want to, not to mystify the audience: We have a provision in our municipal grant program that we can only make grants to public bodies, and every time you run into a private body it gives all of the technicians and the lawyers a field day, and I guess that is how we lawyers make our living.

Any other comments?

MR. PURDY: Outside of that, Mr. Stein, I have no other information to place in the record on behalf of the State of Michigan, and I have not been contacted by anybody that indicates that they want to make a statement.

MR. STEIN: Right.

Now, if anyone from Michigan wants to make a statement -- and this applies to all of the States -- I don't have to repeat this: We are here to hear you, and you are not foreclosed. You can come up and indicate that you want to say something.

May we call on Wisconsin? Mr. Frangos.

MR. FRANGOS: Mr. Chairman, we have two speakers who have indicated they would like to make a brief presentation to the conference. I would like to call first on Mr. Ray White, who is representing the Wisconsin State Council of Trout Unlimited.

STATEMENT OF RAY J. WHITE, AQUATIC BIOLOGIST, WISCONSIN STATE COUNCIL OF TROUT UNLIMITED, MADISON, WISCONSIN

MR. WHITE: As a fishery biologist, I am representing the Wisconsin State Council of Trout Unlimited, a branch of the national organization dedicated to conservation of the salmonid sport fishery resource.

Wisconsin Trout Unlimited is here to represent the interests of the quarter million people who annually fish for trout and salmon in Wisconsin and in its boundary waters. We express our concern over the various ecological problems under consideration by the conference. They should certainly have great bearing on the salmonid resource of Lake Superior which is one of our great interests.

We would commend the commitment to restoring and to maintaining water quality expressed by Governor Lucey, by Governor Anderson, and by Mr. Stein here this morning.

We are here today mainly to observe the proceedings and to collect information for reporting to Wisconsin anglers.

Thanks to you, Mr. Stein, to your agency, and to our Wisconsin Department of Natural Resources for the opportunity.

MR. STEIN: Thank you.

Are there any comments or questions?

If not, this may be a good point to put this telegram in. I have one from Mrs. Kohn Toussaint, President, League of Women Voters of Wisconsin. I would like to put this in as if read without objection.

(The above-referred to telegram follows.)

"The League of Women Voters of Wisconsin urges the enforcement conference to take all action necessary to ensure nondegradation of the waters of Lake Superior. We support strict enforcement of Water Quality Standards. Adequate and coordinated and cooperative interstate and interagency efforts."

MR. STEIN: Mr. Frangos.

MR. FRANGOS: Yes, Mr. Chairman.

We have a statement by Mr. Daniel Engstrom, who is the Vice Chairman of the Northern Environmental Council. Mr. Engstrom has a prepared statement. I would ask that this be submitted as if read for the record, and I would ask Mr. Engstrom if he could perhaps summarize his statement. We have had a considerable amount of testimony at previous sessions as to the nature of the erosion and siltation problem, and if he could summarize that and get to the key points in his presentation, we would appreciate that.

MR. ENGSTROM: There has been a bit of confusion here with who is going to present our statement, so since I am not entirely familiar with the subject, I would call on our consultant, Charles Stoddard, to present the statement in my place.

STATEMENT OF CHARLES H. STODDARD, CONSULTANT,
NORTHERN ENVIRONMENTAL COUNCIL
DULUTH, MINNESOTA

MR. STODDARD: Mr. Chairman, members of the conference. The Northern Environmental Council, which is made up of 31 conservation and citizens groups, had a study committee working on the red clay problem in northwestern Wisconsin, following a red clay interagency committee that has been operating for several years and has reported on the subject in the form of a published report.

However, there has been relatively little followup on the work of the committee. The time is now for some action. What kind of action? The problems that were identified were basically soil erosion from gullies, from stream banks, from roads; sheet erosion from fields and the cave-in of the lakeshore along the south shore. This is due to the fact that this red clay was laid down by silt in the earlier geologic eras, and the lake has retreated, and this is a relatively young soil formation subject to geologic erosion which has been accelerated by man's clearing of the land and various other activities.

These problems are solvable by soil conservation techniques that are well known and that have been applied in other areas: stream stabilization, gully control, strip cropping on fields and terracing, rip-rapping where necessary on stream banks -- the various techniques that have been developed by the Corps of Engineers, for example, on clay bank stabilization along the lakes.

C. H. Stoddard

The Northern Environmental Council's Policy Research Paper No. 7, which deals with this subject, summarizes briefly what the last Red Clay Inter-Agency Committee reported on a more recent study on roadside and roadbank erosion, comes up with a number of suggestions here with respect to what can be done, the principal one being the need for establishing a small watershed association for the areas along the lake that drain into the lake.

The development of plans of soil conservation land management plans for the lands in the area where there is erosion, specific works developed in cooperation with private owners on private lands, then public works on those situations where there is a clear public responsibility, as in the case of roads, as in the case of stream banks, and as in the case of the red clay banks along the lake shore itself.

The need now is to implement the recommendations of the Red Clay Inter-Agency Committee by putting together in effect what would be a joint working group with this association. We recommend that the Governor of Wisconsin appoint a key official who would ram-rod a program and set up a schedule for accomplishment once the studies have been made and the plans have been worked out, and then develop a funding program and an allocation of the job to the individual agency that is responsible.

That, in effect, is a summary of the recommendations, Mr. Chairman.

MR. STEIN: Thank you, Mr. Stoddard.

MR. FRANGOS: Perhaps I will just respond to that very good statment, Chuck.

We were having some discussions with the Governor's people just yesterday about this particular problem. He is very much interested in attacking some of these non-point source problems that we have. I think some of the things that we are recommending to the Governor, and in which he appears interested, is imposing, for example, on our State agencies, as he indicated in his talk today, on their highway construction program, assurances that these will be put through with a minimum of erosion problem.

Additionally we are kind of encouraged by some of the reaction by the Federal Government and the USDA. My understanding is that, for example, the ACP program has now undergone a fairly radical approach, and as I understand the Nixon Administration position in this area it is that the majority of those funds will now be channeled into environmental type projects rather than projects that have the primary purpose for improving cultivation, if you will. So I think we are moving in that direction.

I notice you are talking about shoreline and flood plain zoning. You may notice that our Department has turned the screws on that particular program. We would anticipate that all of our counties will have their shoreline zoning ordinances adopted within the next 45 days, and we are moving, I think, fairly well in the floor plain zoning program also.

MR. STEIN: Mr. Stoddard, before you go on, may we have copies of that statement for the record for the reporter?

Secondly, do you have anything to add to this to specifically suggest that we may as conferees do? Do you see a role for us in this or not?

MR. STODDARD: Yes. As Tom Frangos pointed out, most of the elements for dealing with this problem are available; i.e., the techniques, and the agency responsibilities are fairly well assigned. There is a need for pulling these together because you have Federal, State, and local agencies working in the same area, but not under any sort of area-wide team approach, and our suggestion is for a small watershed district minus drainage ditching and dams specifically laid out in the small watershed thing. This is one of the problems that they have had in other areas, and we don't want to have this come back to haunt us. So that the emphasis would be on watershed conservation measures and soil erosion correction practices, but that there be a coordinating mechanism set up which would be the association, and would be in charge to bring the various elements together into a team operation.

MR. STEIN: Chuck, let me try to take this because this is one of our most vexing problems, not just here but I think everywhere else.

Maybe you don't think we do that good a job, but I think relatively speaking we do a better job with industries and municipalities -- possibly in that order because we don't have the public financing problem with industries -- than we do with sheet runoff, non-point sources, as we call it, or you generally may say land runoff. I hesitate to say agricultural waste because this is just a broad point runoff.

We have the same problem back East where in our wisdom we have managed to pave the country from Boston down to Richmond. I don't think you can call that agricultural runoff. Whenever it rains bucketsful and you get something like we have had here for the last day or two and there is a melt, you get it all over. The land isn't holding this, and without enough drains in the streets, it hits every stream and every tributary at about the same time. This is the one where we have been remiss, and it is a very, very difficult problem for us, with the given procedures we have here when we are not at a point source.

Now, with that as a background, would you say that this whole red clay watershed you are speaking of is entirely within the State of Wisconsin?

MR. STODDARD: Practically, yes. I think it runs over to the Montreal River and pretty well quits when it gets into the hilly country in Michigan there. It is not serious in the Apostle Islands, and the Sand Island area down around until you get beyond the Kakagon Sloughs, and then this starts up again.

MR. STEIN: Now, as I understand your proposal, you feel that what you need here is some kind of authority, say, on a small watershed basis to deal with this. Maybe we can start in one State or maybe Michigan wants to do this. But I am just putting these proposals out that these outfits be concerned with keeping the land on the land, not let it get into water and not be concerned with damming, drainage, and other problems which have usually been of concern of watershed districts. Is this your --

MR. STODDARD: This is the point: that the watershed district would be the institutional focal point for the coordination of the Federal programs, the Federal agricultural programs, the Soil Conservation Service technicians, the county road people, and the town road people, and the Corps of Engineers, I think, comes in, because they have great expertise in the handling of clay banks or of sloughening banks in the Great Lakes, and of shoreline stabilization. So you have a team play that has got to be put together; it can't just happen, i.e., one agency go ahead and another one, and so on. There has got to be a basic plan.

MR. STEIN: I am sure Mr. Frangos and Mr. Mackie and the rest of us are very aware of the problem. We want to get something done, and I am sure that we have heard Governor Lucey and he is very interested in this, too. But it would seem to me as we explore this that the problem you are dealing with is dealing with a political institution, at least with an emphasis or having a coordinative role that is not too common in our country. I know we have one in my home county, in Fairfax County, Virginia, where we have had the same problem. They have set up a soil conservation district in a sense to keep the material on the land in the same way, and at least I think we are having a few glimpses of success there, too.

Now, it would seem to me that what we are largely doing is dealing with the political institutions and the local and State institutions of the State of Wisconsin. I don't know if this should be the suggestion. But if we want this for the conferees, I think we could ask Michigan, certainly, which may be concerned with this, and certainly get the Federal expertise and people involved who are familiar with both the technical problems and the problems of the political subdivisions in the States.

But the proposal might be to ask if Wisconsin can think in terms of coming up with a proposal which would fit in with the State laws and institutions to provide a public mechanism to get the program working.

Now, I don't want to run that by too fast, and if this is your proposal, maybe you can agree to it now or think about it. But we will hold that until the end of the conference and let Wisconsin think about that a little more because we are going into a relatively new field.

MR. STODDARD: This is right.

MR. STEIN: At least my approach at this point as Chairman is very tentative. I would like to get the views of the conferees before we decide how deeply a water pollution control conference should take this on and get enmeshed in this kind of business. This is quite a responsibility and I would like the conferees to think about this carefully.

As I see it, we will probably be here until tomorrow and unless someone has something to say now, maybe we will defer our discussion on this until we complete Reserve and other problems.

MR. STODDARD: Well, I think you have put the problem very clearly. There is no specific precedent that can be used for pulling all of these agencies together. There is a fragmentation of responsibility that has to be coordinated, not just in some kind of a talking committee but in terms of a working committee with some authority, and this takes quite a little staff work to figure it out. There is no easy package.

MR. STEIN: Right.

MR. STODDARD: Here are the copies that you asked for.

MR. STEIN: Thank you very much, Mr. Stoddard.

(The report of the Northern Environmental Council follows in its entirety.)

NORTHERN ENVIRONMENTAL COUNCIL

NOREC Policy Research Paper # 1
January, 1971

RED CLAY SOIL EROSION ON LAKE SUPERIOR'S SOUTH SHORE IN NORTHWESTERN WISCONSIN

BACKGROUND

The problem of the Red Clay erosion along Lake Superior's South Shore (in Northwestern Wisconsin) was brought into focus in 1955 when a Red Clay Inter-Agency Committee was formed of local, state, and federal agencies. This Committee has made an analysis of land-use practices and applied available techniques to soil erosion situations in many test cases.

The Red Clay erosion problems have been noted in other studies by the Wisconsin Department of Natural Resources, the Northwest Regional Planning Commission, the U. S. Soil Conservation Service, and the Federal Water Pollution Enforcement Conference on Lake Superior.

The Inter-Agency Committee published a report in 1967 concerning the Red Clays and its outline of the general problem follows:

THE GENERAL PROBLEM

Sedimentation in streams and rivers of the Lake Superior drainage, resulting in part from excessive erosion, has been classified by the committee as the number one soil conservation problem in the northwestern red clay area of Wisconsin. This area contains 880,000 acres of land located in Ashland, Bayfield, Douglas and Iron Counties. Due to the relatively steep slopes in the watersheds in this area, unprotected red clay soils are unstable and therefore highly erodible, particularly along field gullies, roads and stream banks.

The red clay area is geologically young with soil erosion processes still occurring naturally at a rapid rate. These become accelerated wherever and whenever steep slopes become bare due to natural or man-made causes. The levels of sedimentation in the streams can be classified as "accelerated" following catastrophic floods, and "continuing" occurring in the normal flow. Abnormally heavy rains have periodically accelerated erosion on exposed clay soils. Man has also speeded up erosion through certain agricultural activities, timber cutting and highway construction.

Erosion was speeded up as the area was first cleared--clearcutting of forest land, clearing of agricultural fields and to some extent fires were the major contributing factors. Conditions in the area have been steadily aggravated through destructive logging practices, improper construction and inadequate maintenance of roads, intensive graxing and tramping along the stream banks and ravines which exposes bare soils, and improper drainage to the point that now even minor precipitation is accompanied by a great deal of soil loss.

[illegible] CHRISTIE BLDG., DULUTH, MINN. 55802, PHONE (218/727/2424)

Although erosion and the resultant sedimentation cannot be eliminated entirely, they can be reduced through proper soil and water conservation practices. Generally, the presence of vegetation on steep slopes is one of the principal soil stabilizing factors. To the extent that forest cover prevents, deters, or postpones erosion, forests are valuable. However, forest cover alone is not the answer to adequate erosion control. Deep gullies were formed in bygone days before axe or saw even touched a tree on these red clay soils. However, vegetation serves to reduce runoff both by its use of water in growth processes and by physical retardation. While cover alone will not in many cases stabilize the steep raw slopes, the maintenance of existing cover and the restoration of cover on denuded areas are among the first courses of action.

1967 REPORT

The 1967 Inter-Agency Report then listed specific erosion problems as they pertained to agriculture, forestry, highways, fishery, scenic values, and recommendation for correction. The Report points out that red clay erosion is not only a physical problem but that "Control of sedimentation--is a social, economic and political problem. Special programs are required. Where possible, federal, state and local programs should be immediately implemented".

TODAY 1970

Implementation of the 1967 Report has been limited to a few cases as: The Deer Creek Gully Control Project, The Montreal River Watershed, Highway #112 Gully Control and the Cemetary Ravine in Bayfield. However, the problem continues to worsen with erosion accelerating. This has been duly noted at the recent Lake Superior Pollution Enforcement Conference in Duluth, Minnesota.

The current status of erosion and control efforts in each major source sector is shown in the following paragraphs.

In Agriculture, farm programs such as soil bank have retired lands that are suitable for crops and grazing and put more cows in gully and ravines causing greater erosion. Stream bank erosion has not been dealt with.

In Forestry, increased timber production, year-around logging, bigger bulldozers and skidders, clear cutting and more logging roads have all aggravated the problem.

In Roads, the State Highway Department has attempted to control erosion and has done excellent work such as the reconstruction of Highway #2 in Douglas County. On the other hand, the Bureau of Indian Affairs is probably the worst offender with construction of the Kim Hoist Bridge on the Bad River and the road to the new Lake Superior Campground on the Bad River Reservation. Town and county governments have not made a serious attempt to control badly eroding ditches or stream banks and in many cases have made them worse. An example is the grader cutting into a stabilized roadside bank on the hill leading to the Big Rock County Park on the Sioux River in Bayfield County. Sedimentation caused by roads is worsening, according to the recent survey by the U. S. Soil Conservation Service and District.

In Utility Rights-of-way, there is a serious gap between construction and the length of time that pipeline companies get around to fixing their damage. This has caused heavy silting. Pipeline locations at stream crossings has caused substantial damage, as in the case on the Brule River and Totogatic Rivers and was corrected only after construction--not during.

Along clay banks of Lake Superior there are long stretches of eroding soil and cave-ins. Practically nothing has been tried to correct this problem which usually falls to the U. S. Army Corps of Engineers.

RECOMMENDATIONS

Soil Conservation technology is available to meet the problem. A 7-year program should be initiated with specific recommendations scheduled and a timetable in which they would be put into effect. The Red Clay Interagency Committee should be reactivated to develop a comprehensive program.

1. The whole South Shore area (drainage basin) which includes streams and rivers draining into Lake Superior should be organized into a P.L. 566 Small Watershed Association with the primary objective of arresting soil erosion. (Ditching, drainage, and stream channelization should be spcifically omitted from programs and upstream impoundments and dams kept to a minimum.

2. All private land ownership where erosion is a problem should have soil conservation-land use plans drawn up with specific control practices indicated.

3. The U. S. Soil Conservation Service should assign more manpower to this planning function and reduce manpower assignments on reservoirs, ditching, draining, and channelization projects elsewhere. Additional appropriations for S.C.S. should be requested for this program.

4. Emphasis in Agricultural Conservation Practices subsidy payments should give priority to implementation of the practices set forth in the above plans.

5. For those erosion problems clearly in the public sector (streambanks, roadsides and lakeshore) specific public works should be planned and funded as follows:

   a) Streambank erosion control by special public works appropriations including allocation from the Upper Great Lakes Regional Development Commission.

b) Roadbank erosion should be corrected by allocating state gasoline tax money to counties and townships for this purpose. The state law should be amended so that portions of gas tax money for town and county road maintenance could either be withheld or a bonus paid on roads which have been put under an erosion stabilization program under the supervision of a State and/or Federal Agency.

c) A pilot program be initiated for stabilization of clay banks on Lake Superior shoreline. The U. S. Corps of Engineers which have the technical knowledge for this type of work would need a special appropriation for this work. It would need to be authorized by the Public Works Committees of the U. S. House of Representatives and Senate.

6. The Bureau of Indian Affairs in cooperation with paper companies and private owners should work up a location plan of logging roads in the Bad River Indian Reservation so as to minimize potential damage and to control erosion on land disturbances when logging is completed.

7. A special leaflet describing the "Erosion Control Problems and Needs of the Red Clay Region" should be made available to owners in the Red Clay area.

8. State flood plain and shoreland zoning ordinances be imposed where counties have failed to pass such laws under Chapter 614, Laws of Wisconsin, 1965.

CONCLUDING RECOMMENDATION

In order to move these several agency proposals into consistent steps forward, it is recommended that the Lake Superior Pollution Enforcement Conference request the Governor of the State of Wisconsin to reactivate the Red Clay Inter-Agency Committee and charge that Committee with the responsibility of coming up with a complete plan of work and an organization structure for sponsoring the work program. A seven-year target should be established for completion. A aorking chairman from the Department of Natural Resources responsible to the Governor should be appointed and a plan of work presented to him by September 1971 for implementation.

REFERENCES

"Erosion and Sedimentation Control On The Red Clay Of Northwestern Wisconsin", Red Clay Inter-Agency Committee, Madison, Wisconsin, 1967.

Headwaters Pri-Ru-Ta-Resource Conservation and Development Project, 1970.

Multi-Soil and Water Conservation Districts' Lake Superior Framework Program for Areas 1 and 2.

* * * * *

- This Policy Research Paper was prepared by the NOREC Land Use Planning sub-committee on Soil Conservation, chaired by Martin Hanson of the Wisconsin Resources Conservation Council.

* * * * *

- The NORTHERN ENVIRONMENTAL COUNCIL is composed of conservation and citizen groups joined into a common effort to prevent environmental deterioration of the northwoods, lakes, and prairielands of Northern Wisconsin, Minnesota, Michigan's Upper Peninsula, North Dakota, and Indiana.

OFFICERS OF THE COUNCIL

Prof. Paul Lukens	Chairman	Biologist, Wisconsin State University, Superior, Wisconsin
Daniel Engstrom	Vice-Chairman	S.E.D., University of Minnesota, Duluth, Minn.
Herbert Bergson	Secretary	President, Save Lake Superior Association
James Buchanan	Treasurer	Audubon Society, Duluth

EXECUTIVE COMMITTEE

Officers of Council
Martin Hanson
Milton Pelletier
Dr. Dale Olsen
Arnold Overby
Dr. Charles Carsen

CONSULTANTS

Sigurd Olson	Ecologist, Ely, Minn.
Charles Stoddard	Minong, Wisconsin

MEMBER ORGANIZATIONS OF THIS COUNCIL

Brule River Sportsmen, Inc.
Citizens Committee for the Voyageurs National Park
Citizens to Save Superior Shoreline
Conservation Committee of the Duluth Central Labor Body AFL-CIO
Dakota Environmental Council
Douglas County Fish and Game League
Duluth Bird Club
Duluth-Superior Sane
Ernie Swift Memorial Conservation Committee, Wisc. and Minn.
First Unitarian Church of Duluth, Env. Action Comm.
Friends of the Wilderness
Izaak Walton League of America--Duluth Chapter
Izaak Walton League of America--Fort Wayne, Indiana
Lake Owen Property Owners Association
Lake Superior North Shore Association
Milwaukee Committee of NOREC
Minnesota Environmental Control Citizens Association
North Dakota Natural Science Society
Save Lake Superior Association
Students for Environmental Defense
Students for Pollution Control
Superior Clean Air Committee
Superior Jr. Woman's Club
Unitarian Environmental Committee
United Northern Sportsmen
University of Wisconsin Forestry Club
Wilderness Society
Wilderness Watch, Inc.
Wisconsin Bowhunters Association
Wisconsin Resource Conservation Council
The Junior League of Duluth

- Copies of this Policy Research Paper may be obtained from the Northern Environmental Council Office, 601 Christie Building, Duluth, Minnesota 55802, at a cost of One Dollar each.

T. G. Frangos

MR. STEIN: Mr. Frangos.

MR. FRANGOS: Yes, Mr. Chairman. We would also like to report to the conferees briefly on the status of our municipalities.

MR. STEIN: Yes.

MR. FRANGOS: I will read a summary of this and ask that the entire report be submitted for the record.

MR. STEIN: Without objection, this will be included in its entirety as if read.

(The above-mentioned report follows in its entirety.)

Department of Natural Resources
Madison

REPORT TO THE LAKE SUPERIOR ENFORCEMENT CONFERENCE
Duluth, Minnesota -- January 14-15, 1971

This report provides the change in status of waste discharge sources in the isconsin section of the Lake Superior drainage basin since the August 12-13, 1970, Lake Superior Enforcement Conference.

1. The City of Hurley failed to meet the requirements of Wisconsin Water Pollution Abatement Order Number 1-68-11 and was referred to the Wisconsin Attorney General on September 17, 1970. The Attorney General's office has filed suit in this matter. City of Hurley officials have advised our Department that they are implementing recommendations of their consulting engineer to reduce clear water in the sewerage system. They have also asked consideration for a regional treatment system with Ironwood, Michigan.

2. Our Department referred five other wastewater sources in the basin to the Attorney General on December 11, 1970. Court action has been initiated against: The City of Washburn (Order 1-68-30), the City of Ashland (Order 1-68-2), the City of Bayfield (Order 1-68-4), the Pureair Sanitorium, Bayfield (Order 1-68-21) and Superior Fiber Products Company (Order 1-68-26).

3. The E. I. du Pont de Nemours plant at Barksdale will discontinue operation on March 31, 1971.

4. A meeting was held with the Federal Environmental Protection Agency on December 10, 1970, to discuss the proposal for areawide sewage treatment facilities to be located at Duluth, Minnesota. These facilities might serve the City of Superior. All other entities listed in Wisconsin's Water Quality Standards implementation schedule for the Lake Superior Basin have provided the required remedial measures.

WISCONSIN WASTEWATER SOURCES AFFECTING LAKE SUPERIOR

Page 1
Municipalities
January 11, 1971

Source (Order No.)	Receiving Waters	Existing Treatment	Remedial Needs	Intrastate Water Quality Impl. Date	Status	Comments
Ashland (1-68-2) (4B-70-28-18)	Lake Superior	Primary Disinfection	Secondary Clear Water Phosphorus	10/1/70 10/1/77 12/31/74	Preliminary report approved. Referred to A.G. 12/11/70.	City proposes completion by 12/72.
Bayfield (1-68-4)	Lake Superior	Primary Disinfection	Secondary Clear Water	10/1/70 10/1/77	Preliminary report approved. Referred to A.G. 12/11/70.	
Hurley (1-68-11) (4B-70-28-19)	Montreal River	Primary Disinfection	Secondary Clear Water Phosphorus	10/1/70 10/1/77 12/31/74	Referred to A.G. 9/17/70. Received preliminary report of alternatives 11/27/70.	Implemented cons. eng. recommendations on clear water 9/23/70.
Superior (1-68-26) (4B-70-28-17)	Lake Superior	Primary Disinfection	Secondary Clear Water Phosphorus	10/1/70 10/1/77 12/31/74	Preliminary engineering report reviewed. Considering NEMDA.	City proposes completion by 12/72.
Washburn (1-68-30)	Lake Superior	Primary Disinfection	Secondary Clear Water	10/1/70 10/1/77	Preliminary engineering report approved. Referred to A.G. 12/11/70.	City proposes to complete construction by 12/71.
Pure Air Sanitorium					Referred to A.G. 12/11/70.	Negotiating for joint treatment with marina.

WISCONSIN WASTEWATER SOURCES AFFECTING LAKE SUPERIOR

Page 1
Industries
January 11, 1971

Source (Order No.)	Receiving Waters	Existing Treatment	Remedial Needs	Intrastate Water Quality Impl. Date	Status	Comments
Superior Fiber Prod. Co., Superior (1-68-26)	Lake Superior	Chemical and Screening	San. Sew. Trt. Ind. Waste Trt.	- 10/1/70	Delinquent on State order for san. sew. treatment. Referred to A.G. 12/11/70.	In-plant reduction: Flow - 75%; SS - 47%; BOD - 7%.
American Can Co., Ashland (1-68-3)	Lake Superior	Mechanical Centrifuge Clarifier	None	None	Satisfied State order. Additional treatment needs being evaluated.	Investigating sludge incineration.
E. I. Du Pont de Nemours, Barksdale (1-68-7)	Boyds Creek	Neutralization Flow Equalization	Adeq. Ind. Waste Treatment	10/1/70	Plant to be closed.	Status quo until 3/31/71.
ADM Grain Co., Superior (4B-70-28-1)	St. Louis Bay		San. Sew. Treatment	None	State order requiring adequate treatment by 10/1/71.	Order compliance being reviewed.
Burlington & Northern R.R., Superior (4B-70-28-2)	Superior Bay	None	San. Sewage Treatment	None	State order requiring adequate treatment by 10/1/71.	Letter of 11/19/70 outlining proposal for compliance.

WISCONSIN WASTEWATER SOURCES AFFECTING LAKE SUPERIOR

Source (Order No.)	Receiving Waters	Existing Treatment	Remedial Needs	Intrastate Water Quality Impl. Date	Status	Comments
Cutler-LaLiberte, Superior (4B-70-28-3)	Superior Bay	None	Sanitary Sewage Treatment	None	State order requiring adequate treatment by 10/1/71.	Arrangements made to connect to city sewers
Douglas County Fairgrounds, Superior (4B-70-28-4)	Surface Drainage	City (Partially)	Eliminate health hazard.	None	State order requiring adequate treatment by 12/1/70.	Part of facilities completed. No pollution.
Exports, Inc. Superior (4B-70-28-5)	St. Louis Bay	City	Sanitary Sewage Treatment	None	State order requiring adequate treatment by 12/1/70.	Under construction 10/14/70 to connect. No pollution.
Farmers Union GTA, Superior (4B-70-28-6)	St. Louis Bay	None	Sanitary Sewage Treatment	None	State order requiring adequate treatment by 10/1/71.	Arrangements made to connect to city sewers.
Frazer Shipyards, Superior (4B-70-28-7)	St. Louis Bay	City (Partially)	Sanitary Sewage Treatment	None	State order requiring adequate treatment by 10/1/71.	One sewer connection completed.
Dr. Garvey Animal Hosp., Superior (4B-70-28-8)	Nemadji River	None	Sanitary Sewage Treatment	None	State order requiring adequate treatment by 10/1/71.	

WISCONSIN WASTEWATER SOURCES AFFECTING LAKE SUPERIOR

Source (Order No.)	Receiving Waters	Existing Treatment	Remedial Needs	Intrastate Water Quality Impl. Date	Status	Comments
Globe Elevator, Superior (4B-70-28-9)	St. Louis Bay	None	Sanitary Sewage Treatment	None	State order requiring adequate treatment by 10/1/71.	
Great Lakes Coal & Dock Company, Superior (4B-70-28-10)	St. Louis Bay	None	Sanitary Sewage Treatment	None	State order requiring adequate treatment by 10/1/71.	Plans approved on 11/12/71 for soil absorption system.
Huron Portland Cement Company, Superior (4B-70-28-11)	Superior Bay	None	Sanitary Sewage Treatment	None	State order requiring adequate treatment by 10/1/71.	Letter of 9/30/70 advising of intent to connect to city.
M & O Elevators, Inc., Superior (4B-70-28-12)	Superior Bay	None	Sanitary Sewage Treatment	None	State order requiring adequate treatment by 10/1/71.	
Northern Engrg. Co., Superior (4B-70-28-13)	St. Louis Bay	City	Sanitary Sewage Treatment	None	State order requiring adequate treatment by 10/1/70. Satisfied.	Sewer connection completed by 10/1/70.

WISCONSIN WASTEWATER SOURCES AFFECTING LAKE SUPERIOR

Page 4
Industries
January 11, 1971

Source (Order No.)	Receiving Waters	Existing Treatment	Remedial Needs	Intrastate Water Quality Impl. Date	Status	Comments
Peavey Flour Mills, Superior (4B-70-28-14)	Superior Bay	None	San. Sew. Trt. Ind. Waste Trt.	None	State order requiring adequate treatment by 10/1/71.	Letter of 11/30/70 advises of intent to connect to city.
C. Reiss Coal Co., Superior (4B-70-28-15)	Superior Bay	None	San. Sew. Trt.	None	State order requiring adequate treatment by 10/1/71.	Eng. proposal receive on 9/24/70.
Soo Line R.R., Superior (4B-70-28-16)	St. Louis Bay	Soil Absorption	San. Sew. Trt.	None	State order requiring adequate treatment by 10/1/71. Satisfied.	Disposal facilities completed as of 11/24/70.

1-11-71
JM

MR. MAYO: Just a point of clarification, Mr. Frangos. I understand that there has not yet been an action on the part of Wisconsin to formally extend any of these dates.

MR. FRANGOS: No, these dates have expired, and on the basis of our State orders they have been referred to our Attorney General.

MR. STEIN: Well, I hope the list gets smaller, but I never fail to be amused as we come to these conferences to find an outfit on a list of polluters called Pureair Sanitorium.

Are there any other comments or questions? If not, thank you very much. That concludes the Wisconsin statement, and we will go to Minnesota.

Will you handle that for us, Mr. Badalich?

MR. BADALICH: I certainly will, Mr. Chairman.

MR. STEIN: Let me say at the outset, we intend to continue until about 12:00 o'clock when we will recess for lunch, and I just want to indicate that for the convenience of the people who will be called on the schedule.

MR. BADALICH: Mr. Chairman, fellow conferees, I will present the Minnesota Pollution Control Agency statement first, and then we do have a list of approximately 14 or 15 individuals as well as municipalities that want to make a statement, including industries, and we will finally end up with Reserve Mining Company making their proposal.

MR. STEIN: May I interrupt just one second because I should get this over. We have had this before here and let me get off the record on this.

(Discussion off the record.)

MR. STEIN: Let me put this telegram into the record. This will appear at the beginning with the other telegrams.

(Whereupon, Mr. Stein read a telegram. See p. 22a.)

This telegram is signed by Senator Gaylord Nelson, Representative John Blatnik, Senator Walter Mondale, Senator Hubert Humphrey, Senator William Proxmire, Senator Philip Hart, and Senator Robert Griffin.

I hope that this gets the record clear on that.

Would you continue?

Let me go off the record just for one second.

(Discussion off the record.)

STATEMENT OF JOHN P. BADALICH, EXECUTIVE DIRECTOR, MINNESOTA POLLUTION CONTROL AGENCY, MINNEAPOLIS, MINNESOTA

MR. BADALICH: Mr. Chairman, fellow conferees, ladies and gentlemen. This is a statement of the Minnesota Pollution Control Agency to the conference of the Lake

Superior Enforcement for January 14 and 15, 1971.

The Minnesota conferees, again, are Dr. Howard Andersen, Chairman of the Agency; Mr. Robert Tuveson, former Chairman and Member; and myself, as the Executive Director of the Agency.

The following comments, which will bring you up to date on developments since the August meeting, relate to the remaining relevant recommendations of the Federal Water Quality Administration summary of January 26, 1970, as modified by the conferees in April and August of 1970.

If you want to refer to your July or your January 1970 summary, and we can follow through on these recommendations.

Recommendation 1: The Agency is implementing the recommendations made concerning standards for the open waters of Lake Superior. A public hearing on adoption of the proposed standards is scheduled for February 17, 1971, in Duluth. The pesticide limits previously set by the conferees in Recommendation 15 have been included as well as others. We take this opportunity to invite the conferees and their technical representatives to appear at this hearing and present evidence bearing on the proposed standards.

J. P. Badalich

Recommendation 3: The Reserve Mining Company has not as yet submitted the final report on waste disposal improvements that was to be submitted by December 1, 1970. Request by the company for an extension of this deadline has not been granted.

In mid-December the District Court rendered its judgment in regard to the appeal of the company from Minnesota's interstate water quality standards. A copy of the judgment of the court was provided earlier to each conferee.

Although the Court held that the effluent standard of Minnesota, Regulation WPC 15, is invalid in regard to Reserve, at the same time the Court ordered Reserve to flocculate the fines and convey all of the tailings by pipeline to the floor of Lake Superior to thus eliminate the green water effect. Plans to accomplish this task were ordered to be submitted by May 15 to the Agency for approval and the Agency was directed to grant a variance from the regulation until this is done. The Attorney General has stated that an appeal will be filed.

A concept proposed recently to some of the conferees apparently relates to an earlier proposal which includes clarifiers for flocculation of the fines and a piping system to carry the tailings into the lake to a depth of about 150 feet.

J. P. Badalich

The plan has not yet been presented to the Minnesota conferees and we have not had an opportunity to make a technical evaluation or to determine whether the proposed system will meet the requirements of the Minnesota and Federal Water Quality Standards.

Recommendation 4: A grant application has been prepared to expand our current contract study on the prevalence of pesticide residues in the waters of the basin. The expansion will consist of the inclusion of mercury, lead, other metals, and polychlorinated biphenyls. The application will be submitted for consideration as soon as funding becomes available for the matching State portion. In addition, Dr. Shapiro of the University of Minnesota Limnological Research Center is interested in applying for a grant to study the nutrients and key growth elements in the waters of Lake Superior, and the Minnesota Geological Survey also has indicated an interest in undertaking a survey to determine the content of mercury and other toxic elements in the natural rocks and soils of Minnesota.

Recommendation 5: Except for the village of Carlton, stipulations for secondary treatment have been entered into with the Agency by all of the municipalities in Minnesota which discharge to or affect interstate waters and all of these municipalities are presently in compliance with the current requirements of the action plan as set forth in Attachment A. (See P. 78)

The engineering reports required by March 1, 1971, also have in most instances been completed or are well under way, but it is anticipated that the authorization for preparation of final plans will in a number of cases have to be deferred for at least 3 months beyond the April 1, 1971, deadline of the action plan.

The necessity for the delay arises from a proposal for a regional approach to sewage disposal in the Duluth-Superior-Cloquet area which was presented recently to the Agency by the Northeastern Minnesota Development Association, NEMDA. Most of the conferees have previously been furnished a synopsis of the proposal and also have had a personal briefing by NEMDA, so I will not repeat the details of the project here. It provides interceptors to carry the wastes from the Cloquet area and Superior to a regional plant in Duluth with all of the facilities to be constructed and operated by an area-wide sanitary district. The proposal offers the usual advantage of a regional approach plus removal of all effluent from the St. Louis River and the possibility of substantial cost savings because of the inherent economics of scale and the commingling of paper and pulp mill wastes with the sewage. There are also

J. P. Badalich

disadvantages, among which are the need for time to permit formation of the district and postponement of completion of needed new treatment works from beyond 1973 to possibly 1975.

The proposal appears to have the support of virtually all of the municipalities and major industries of the area. The Agency is convinced of the overall desirability of the project and, therefore, has agreed to allow deferral of compliance with the interim stipulation schedules until mid-June. This was done to give the proponents time to obtain from the 1971 legislature, now in session, necessary enabling statutes for formation of the district. If for any reason the district is not formed by July 1, 1971, the final completion dates of the stipulations shall remain in effect and will be met. We ask your concurrence in this action.

Recommendation 7: The suit against the Superwood Corporation of Duluth was settled by a stipulation and court order which require diversion of the company's sewage and industrial wastes into the city system by May of 1973 and interim chlorination of the sewage effluent. Chlorination has been started at the Duluth Works of the U.S. Steel Company. Further details are given in a report of the status of scheduled construction. This is contained in

J. P. Badalich

Attachment B. (See Pp. 79-83)

Recommendation 8: The Agency on December 14, 1970, adopted regulations which require the reduction of phosphorus to the level of 1 milligram per liter in all sewage or industrial wastes discharged to surface waters of the Lake Superior Basin. Orders are being prepared for issuance to the municipalities and industries, and this is listed in Attachment C. (See Pp. 84-86)

Recommendation 9: The general comments made previously in regard to municipalities under Recommendations 5 and 8 apply also to the industries involved with this recommendation for equivalent treatment. The industries which have stipulated are listed in Attachment B, and the others in Attachment C.

Recommendation 13: The status of separation of combined sewers and other sewer system improvements is given in Attachment C.

Recommendation 16: A brief report on a survey of port facilities for sewage disposal is appended as Attachment D. (See Pp. 87-91)

In summary, the more noteworthy developments which have occurred since August 1970 include the court orders which require the Reserve Mining Company and Superwood Corporation to install waste control works, the signing of stipulations by the Continental Oil Company for phosphorus reduction at its Wrenshall Refinery and the village of Scanlon for secondary treatment and phosphorus reduction, the proposal by the NEMDA for formation of a regional district for sewage and waste disposal in the Duluth-Cloquet-Superior area, and the receipt of a preliminary engineering report from the Continental Oil Company of Wrenshall. Engineers have been retained and/or technical studies begun by Babbitt, Gilbert, Hibbing, Hoyt Lakes, Kinney, McKinley, Meadowlands, the Minnesota Department of Natural Resources for Jay Cooke State Park. and the city of Virginia.

Those responsible for wastes discharged into the Lake Superior Basin have been requested to be present in order to furnish detailed information on their situation. I trust that those representatives present today can provide whatever additional information may be desired by the conferees for their deliberations in this matter. The Agency reaffirms its pledge to cooperate in every manner possible to ensure that this conference is successful in protecting these waters. I thank you.

The attachments I have, Mr. Chairman, numbered A through D, I would like to have also included in the record.

MR. STEIN: Without objection, they will be included in the record as if read.

(The above Attachments A through D will be found at Pp. 78-91.)

MR. STEIN: Mr. Badalich, I would like a point of clarification.

MR. BADALICH: Yes, sir.

MR. STEIN: I want to preface that by saying I consider this a very important point of clarification.

In two places you say "the court," and I assume that is the State -- "the court ordered Reserve to flocculate" -- and at the end you say that "the court orders ... require ... Reserve Mining ... to install waste control works."

I would really like a clarification on that because I read that court opinion, and at first blush I am not sure that that is an order, is it?

MR. BADALICH: Well, I think it is, Mr. Chairman.

MR. STEIN: Well, I would like your views.

MR. BADALICH: Well, my views are that the matter was retained with the court, first of all, and the court also indicated that by May 15 of 1971, that the Reserve Mining Company must present to the Minnesota Pollution Control Agency a plan for modification of

Attachment A

MINNESOTA POLLUTION CONTROL AGENCY
Division of Water Quality

Preliminary Action Plan and Completion Schedule for Construction of Treatment Works to Conform with Recommendations of Lake Superior Enforcement Conference as set forth in Summary of January 26, 1970

April, 1970

Waste Treatment and/or Control Task	Listed in FY 70 I & E Plan with Requirement for Nutrient Reduction(1)	Other Sources which Discharge to or otherwise affect Interstate Waters(2)	Sources which otherwise affect only Intrastate Waters(3)
Effluent disinfection or equivalent	----	May, 1970	May, 1970
Retain consulting engineer	----	Sept., 1970	Sept., 1970
Engineering report on secondary treatment and/or phosphorus reduction	March, 1971	March, 1971	March, 1971
Authorize final plans	April, 1971	April, 1971	April, 1971
Final plans on secondary treatment and/or phosphorus reduction	Oct., 1971	Oct., 1971	Oct., 1971
Engineering report on sewer separation	Oct., 1971	Oct., 1971	Oct., 1971
Financing arrangements	Jan., 1972	Jan., 1972	Jan., 1972
Award contract for secondary works and/or phosphorus reduction	April, 1972	April, 1972	April, 1972
Initial contract for sewer separation	April, 1972	April, 1972	April, 1972
Secondary works completed and in operation	Nov., 1973	Nov., 1973	Jan.. 1975
Tertiary works completed and in operation	Nov., 1973	Jan., 1975	Jan., 1975
Sewer separation projects completed	Nov., 1979	Nov., 1979	Nov., 1979

(1) Included only municipalities which discharge sewage directly to an interstate lake, bay or reservoir.

(2) Normally includes some sources not discharging directly to interstate waters but which because of proximity or inadequate treatment may violate standards for interstate waters.

(3) Except for possible discharge of nutrients.

Attachment B

MINNESOTA POLLUTION CONTROL AGENCY
Division of Water Quality

Status of Scheduled Construction of Works for Treatment of Wastes which are Discharged to Waters of the Lake Superior Basin (1)

January 12, 1971

Source and Remaining Control Tasks	Status
Cloquet	
Operation of pilot plant and analysis of data by August 12, 1970 extended to June 14, 1971 Preparation of final basis of design and estimates of costs for treatment facilities by October 12, 1970 extended to June 14, 1971 Negotiations for final contract for joint treatment facilities by December 12, 1970 extended to June 14, 1971 Preparation of plans and specifications for treatment facilities by November 12, 1971 Submittal of plans and specifications to appropriate authorities for approval Advertisement for bids, bid analysis, and awarding of contract, subject to approval of agency granting construction funds, by January 12, 1972 Agency approval for granting construction funds Construction of treatment facilities by November 12, 1973	A preliminary engineering report on joint treatment with the industries has been provided. A letter from the city dated February 6, 1970 indicates that they will proceed with planning for joint treatment with the Northwest Paper Company and Conwed.
Continental Oil Company, Wrenshall Refinery, Wrenshall	
Furnish revised engineering report for expansion of existing wastewater treatment facilities by February 1, 1971. Make a decision on diversion to Carlton or independent waste treatment facilities, and submit contract for municipal treatment of plant wastes, if chosen, by July 1, 1971. If independent waste treatment is chosen, submit final plans by December 1, 1971. Take bids and award contract for works by April 1, 1972. Complete construction and place facilities in operation by May 26, 1973.	

(1) Includes only those schedules which are incorporated in an order or stipulation

Source and Remaining Control Tasks	Status
Conwed Corporation, Cloquet	
Operation of pilot plant and analysis of data by August 12, 1970 extended to June 14, 1971 Preparation of final basis of design and estimate of costs for treatment facilities by October 12, 1970 extended to June 14, 1971 Negotiations for final contract for joint treatment facilities by December 12, 1970 extended to June 14, 1971 Preparation of plans and specifications for treatment facilities by November 12, 1971 Submittal of plans and specifications to appropriate authorities for approval Advertisement for bids, bid analysis, and awarding of contract, subject to approval of agency granting construction funds by January 12, 1972 Agency approval for granting construction funds Construction of treatment facilities by November 12, 1973	A letter dated February 9, 1970 from Conwed indicates that the company will proceed with planning for joint treatment with Cloquet and the Northwest Paper Company if this method proves to be of least cost to the company. The company has submitted a preliminary report on studies leading to complete elimination of wastes by process changes and in-plant controls.
Duluth	
Furnish to Agency and Superwood a preliminary draft of joint commitment or agreement with Superwood for construction of interceptor sewer and future sewer service by January 15, 1971. Furnish to Agency for approval an executed commitment or agreement with Superwood, as above, and submit preliminary engineering report on Superwood interceptor by February 15, 1971. Authorize preparation of final plans for Superwood interceptor by March 15, 1971. Authorize consulting engineers to prepare final construction plans and specifications for secondary treatment works, including phosphorus reduction, by June 14, 1971. Submit final plans for Superwood interceptor by June 15, 1971. Solicit bids and award contract for Superwood interceptor by August 15, 1971. Submit final plans and specifications for secondary treatment works, including phosphorus reduction, by November 15, 1971.	Revised engineering report on secondary and tertiary treatment facilities has been received.

Source and Remaining Control Tasks	Status
Solicit bids and award contract for secondary treatment works, including phosphorus reduction, by January 15, 1972.	
Complete construction of Superwood interceptor by November 26, 1973.	
Require Superwood to commence discharging its wastes into the interceptor if so requested by the Agency by May 15, 1973.	
Complete construction and place in operation secondary treatment works, including phosphorus reduction, by November 26, 1973.	
Fitger Brewing Company, Duluth	
Construction of necessary in-plant changes and diversion of process wastes into the sanitary sewer system by December 31, 1970 extended to June 30, 1971	Some pipe location work has been done but connection delayed by uncertainty as to site of new freeway interchange.
Grand Marais	
Construction plans for secondary and tertiary treatment facilities by December 30, 1970	Engineering report has been received. Further field work needed to evaluate sewer infiltration has delayed submission of plans.
Contract awarded for secondary and tertiary treatment facilities by March 30, 1971	
Secondary and tertiary treatment facilities to be completed by September 30, 1972	
Minnesota Power and Light Company, Hibbard Plant, Duluth	
Engineering report on improvement of sewage and ash disposal systems to be submitted by September 1, 1971	The company has recently submitted report on studies.
Final plans to be submitted by January 1, 1972	
Construction to be completed and facilities to be placed in operation by July 7, 1972	
Minnesota Power and Light Company, Hoyt Lakes Plant, Hoyt Lakes	
Complete construction and place in operation necessary sanitary and process wastes disposal systems by July 1, 1971 so that all waste effluents are in compliance with applicable water quality standards.	The company has recently submitted a report on proposed revisions to the existing system.

Source and Remaining Control Tasks	Status
The Northwest Paper Company, Cloquet	
Operation of pilot plant and analysis of data by August 12, 1970 extended to June 14, 1971	A letter dated February 6, 1970 indicates that the company will proceed with planning for joint treatment with Cloquet and Conwed. Pilot plant studies have had to be more prolonged than anticipated.
Preparation of final basis of design and estimate of costs for treatment facilities by October 12, 1970 extended to June 14, 1971	
Negotiations for final contract for joint treatment facilities by December 12, 1970 extended to June 14, 1971	
Preparation of plans and specifications for appropriate authorities for approval	
Submittal of plans and specifications to appropriate authorities for approval	
Advertisements for bids, bid analysis, and awarding of contract, subject to approval of agency granting construction funds by January 12, 1972	
Agency approval for granting construction funds	
Construction of treatment facilities completed by November 12, 1973	
Scanlon	
If Agency disapproves of the decision of the village to improve its treatment works, village must contract to divert wastes to multi-municipal facility by June 14, 1971.	The Agency has not commented on the village's decision because of the proposal for the NEMDA project.
If Agency approves continuing independent treatment, village must submit final plans for secondary and tertiary treatment works by June 15, 1971.	
Take bids and award contract for independent works by July 15, 1971.	
Complete construction and place facilities in operation by September 1, 1973.	
Silver Bay	
Final plans on expansion of secondary treatment facilities and phosphorus reduction and measures to eliminate sources of infiltration and/or storm water influx by February 28, 1971	Engineering report has been received.
Bids and awards by May 30, 1971	
Construction to be completed by November 30, 1972	

Source and Remaining Control Tasks	Status
Superwood Corporation, Duluth	
Complete necessary construction on company property prior to November 26, 1972 to connect to public interceptor, and divert sewage and industrial wastes to city sanitary sewer system by May 15, 1973.	Consultant is working on in-plant improvements concurrently with studies for diversion to the city system.
Two Harbors	
Final plans on sewer improvements by September 1, 1970 Bids and awards on sewer works by November 1, 1970 Amended preliminary report and revised federal grant application by October 31, 1971 Final plans on treatment works by December 30, 1971 extended to March 30, 1972 Bids and awards on plant by April 30, 1972 extended to May 31, 1972 Plant construction to be completed by May 26, 1973 Sewer separation to be completed by November, 1979	Engineering report on secondary and tertiary treatment facilities and on sanitary sewer infiltration and storm water influx problems has been received.

Attachment C

MINNESOTA POLLUTION CONTROL AGENCY
Division of Water Quality

Remaining Non-Conforming Sources of Sewage and Industrial Wastes Discharged in the Lake Superior Basin for which Additional Treatment or Control may be Necessary for Compliance with Recommendations of Enforcement Conference. (1)

December, 1970

Name and Location	Treatment and/or Control Need	Remarks
Abex Corporation, Two Harbors	Improve treatment works	Company is making study of wastes and preparing plans.
Aurora	Phosphorus reduction	Progress has not been reported.
Babbitt	Phosphorus reduction	Village has studies underway and has requested a variance.
Biwabik	Phosphorus reduction	Progress has not been reported.
Buhl	Phosphorus reduction	Progress has not been reported.
Carlton	Secondary treatment and phosphorus reduction, sewer system improvements.	An engineering report has been received.
Chisholm	Phosphorus reduction	Progress has not been reported.
Cloquet	Sewer system improvements	An engineering report has been received.
Diamond Tool and Horseshoe Co., Duluth	Treatment works or divert to city sanitary system	Progress has not been reported.
Duluth	Sewer system improvements	It is understood that the city has made some improvements, however, a report on a comprehensive sewer study has not yet been submitted.
Eveleth	Phosphorus reduction	Progress has not been reported.
Floodwood	Phosphorus reduction	Progress has not been reported.
Fraser	Phosphorus reduction	Progress has not been reported.
Gilbert	Phosphorus reduction	A consulting engineer has been retained.
Grand Marais	Sewer system improvements	An engineer has been employed and studies are underway.

(1) Does not include federal establishments.

Hibbing	Phosphorus reduction	A consulting engineer has been retained.
Hibbing Power Plant	Treatment works	Progress has not been reported.
Hoyt Lakes	Phosphorus reduction	A consulting engineer has been retained.
Iron Junction	Phosphorus reduction	Progress has not been reported.
Kinney	Phosphorus reduction	A consulting engineer has been retained.
Leonidas	Phosphorus reduction	Progress has not been reported.
McKinley	Phosphorus reduction	A consulting engineer has been retained.
Meadowlands	Phosphorus reduction	A consulting engineer has been retained.
Minnesota Department of Natural Resources, Jay Cooke State Park, Carlton County	Expand treatment including phosphorus reduction	Department has agreed to improve facilities.
Mountain Iron	Phosphorus reduction	Progress has not been reported.
Nichols Township, St. Louis County	Phosphorus reduction	Progress has not been reported.
Reserve Mining Company, E. W. Davis Works and Power Plant, Silver Bay	Treatment works	Company has retained engineers and is preparing specific proposal.
R. J. Reynolds Foods, Duluth	Expand treatment including phosphorus reduction or divert to city system	Company has agreed to do intensive sampling of wastes to determine if further diversion to city system is needed.
St. Louis County, Nopeming Sanitorium, Duluth	Phosphorus reduction	Progress has not been reported.
Scanlon	Sewer system improvements	Progress has not been reported.
Stuntz Township, Holly Lake Community, St. Louis County	Phosphorus reduction	Progress has not been reported.
Thompson Township, Esko Community Carlton County	Phosphorus reduction	Progress has not been reported

Two Harbors Power Plant	Treatment works	Progress has not been reported.
Union Carbide Co., Duluth	Treatment works	Progress has not been reported.
U.S. Steel Corporation, Duluth Works, Duluth	Expand treatment works Phosphorus reduction	The company has agreed in principle to upgrade facilities to comply with standards requirements, and has studies underway.
U.S. Steel Corp., MinnTac Plant sewage works, Mountain Iron	Phosphorus reduction	Progress has not been reported.
Virginia	Phosphorus reduction	A consulting engineer has been retained.

MINNESOTA POLLUTION CONTROL AGENCY
Division of Water Quality

Memorandum on Sewage Disposal Facilities for Watercraft and Commercial Vessels at Ports on the North Shore of Lake Superior

January 5, 1971

Commercial, recreational and other vessels on Lake Superior contribute both untreated and inadequately treated sewage and wastes to the Lake and harbor areas. These wastes have been found to include sewage, bilge water, dunnage, ballast water, wash waters, chemicals and various cargo spills.

Existing federal regulations prohibit the dumping of litter, sewage and various other wastewaters near water intakes and some other locations on the Great Lakes. Minnesota has a law requiring pleasure craft which have on-board toilet facilities, to also have an acceptable sewage treatment device or holding tank. This survey was made to determine the extent of the shore installations available to service such units.

An investigation was conducted during the week of October 18, 1970 of all known ports, marinas or harbors in the Lake Superior Basin of Minnesota to determine the availability of facilities for collecting and treating the various wastes which originate on watercraft.

The investigation results revealed that only two marinas, both in Duluth, have facilities for emptying holding tanks from pleasure craft. The remaining harbors or mooring areas along the North Shore do not provide any type of collection or treatment equipment for pleasure craft wastes, nor do any of the industrial harbors provide collection or treatment for sanitary sewage, garbage, dunnage, or bilge and ballast waters.

The Port of Duluth-Superior has regulations which prohibit discharge of polluted ballast or bilge waters, garbage and dunnage while vessels are in port, but the only regulation pertaining to sewage requires the use of splash boards on docked vessels to prevent spillage over the dock surfaces. Attempts at providing portable privies on the docks for use by work crews and ship personnel while vessels are moored, have not been successful.

Garbage and dunnage from foreign and ocean-going vessels in the Port of Duluth can be disposed of only through the "Marine Sanitary Service," a private enterprise that operates a series of scows and dump trucks that individually service the vessels while in port. The garbage is collected in closed, waterproof containers and burned in an oil fired incinerator near the harbor area. Ash residue is disposed of in the Duluth landfill. Dunnage is openly burned on property adjacent to the incinerator. American and Canadian vessels in the harbor are not required to use this service and the majority of these ships burn their garbage on deck in 50 gallon drum-type incinerators, with ash residue and dunnage received on the dock for disposal.

A recent study prepared for the Northeastern Minnesota Development Association (NEMDA) relating to the feasibility of a regional waste treatment plant to serve the combined municipal and industrial wastes of the Duluth-Cloquet area, included provisions for serving the Duluth-Superior Harbor area.

The report proposed a vessel pollution control system consisting of 1) a mobile-scavenger service, (either powered or towed,) to collect solid refuse from ships, gather sewage from on-board holding tanks, and to treat bilge and ballast waters in oil-water separators before discharge to the harbor; plus 2) on-shore facilities consisting of tanker cleaning stations, additional oil-water separators for treating bilge and ballast waters, sewage transfer stations for the mobile scavengers and equipment to service pleasure craft with on-board holding tanks, transfer stations for solid waste and oil processing facilities to reclaim oil residues.

The estimated capital costs for the necessary shore-handling facilities approximate $750,000. Also, it is estimated that four mobile-scavenger units, at $350,000 each, would be necessary for adequate service to the harbor area.

The cost of these facilities would be charged against those vessels using the port and are anticipated to average about 2¢ per ton of cargo. Total cost for typical vessels calling on the port would vary from $160-$400, depending on their size and the service's required.

The Agency approved on December 14, 1970, the overall concept of the NEMDA proposal, including the concept of shore disposal of sewage originating from vessels and watercraft in the Port of Duluth. However, should the regional district proposal not receive Legislative authorization, it is recommended that additional studies be initiated by the County and the Seaway Port Authority to provide on-shore sewage disposal facilities in Duluth in the near future. Such facilities should also be provided at all of the Lake Superior industrial harbors and marinas in Minnesota.

Michael A. Zagar, Staff Engineer
Section of Municipal Works

Sites Inspected for Sewage Disposal Facilities on the North Shore of Lake Superior, October 1970

Location	Description	Regulations and/or Facilities Available
Port of Duluth	Commercial port	Splash boards required, garbage and dunnage from foreign & ocean going vessels collected and incinerated. Regulations prohibit dumping of wastes while in port.
Connie's Landing, Duluth	Privately owned launch-ramp & marina	No pumping facilities available; generally do not handle boats large enough for holding tanks.
Drill's Marina, Duluth	Privately owned launch-ramp, & marina	Pump for pumping holding tanks; waters hauled to Smithville Waste Treatment Works.
Lakehead Boat Basin, Duluth	Privately owned launch-ramp, & marina	Pump for pumping holding tanks; wastes go to Duluth sanitary sewer.
Duluth Marine Sales, Duluth	Privately owned launch-ramp	Facilities available
Village of Knife River	Municipal harbor	No facilities available
City of Two Harbors	Municipal launch area, iron ore docks	No facilities available No facilities available
King's Landing	Private launch ramp, & marina	No facilities available
Village of Silver Bay	Reserve Mining iron ore docks	No facilities available
Village of Taconite Harbor	Erie Mining Power Plant	No facilities available
Lutsen Ski Lodge and Resort	Private landing	No facilities available
Village of Grand Marais	Municipal harbor	No facilities available

Location	Description	Regulation and/or Facilities Available
Havland	Launch area and landing	No facilities available
Voyager Marina, Grand Portage	Private launch ramp	No facilities available

disposal of their taconite tailings, and if you read this memorandum, I believe the memorandum very clearly stated that the method shall be the flocculation of the fine tailings, and in turn discharge into the lake at a point so that -- or discharge by conduit so that the total tailings reached the so-called Great Trough.

MR. STEIN: Now, I am not arguing with the details. The question here is whether there is an order of the court against the community. In the memorandum on the matter, the court says here: "This court feels that the time has come to brush aside all legal technicalities and procedures that may impede a resolution of these questions without further delay..."

Is it your opinion that this is an order of the court? If it is, I am not disputing this because this is a State judgment. I think we would like to hear this when Reserve comes up here what their opinion of this is too because I think this is a vital point on whether there is a court order or not that Reserve is under.

MR. BADALICH: Mr. Chairman, I construe it as a court order, at least from the legal advice that we have obtained.

MR. STEIN: All right.

Are there any further questions or comments?

MR. PURDY: I have one question, Mr. Stein.

Mr. Badalich, you mentioned under Recommendation 16 this matter of port facilities for sewage disposal. If I remember correctly, at an earlier conference, a union representative, I believe, appeared and made a statement and said that the union would not unload ships that did not have waste disposal facilities installed, and I am wondering what took place this last summer.

MR. BADALICH: I think from the feedback I get, Mr. Purdy, from Mr. Tom Burt, that this was being done. The unions -- I mean the longshoremen were making it difficult to have the vessels unloaded unless there were facilities available for disposal of the waste generated on shipboard.

MR. PURDY: Is it the sanitary waste? To my knowledge, most lake freighters do not have sanitary waste disposal facilities onboard. This is one of the problems we are having right at the moment on those lake freighters that sail in Michigan waters.

MR. BADALICH: Well, it is my understanding that the foreign vessels, or any commercial vessel that did use the dockage at Port Duluth that they were asked, and I think in some cases forbidden, to use the head facilities onboard, and there were onshore -- on-dock facilities available, like the satellite, or this type of a facility, was made available to the foreign vessels.

MR. PURDY: So this related only to when they were in port and not when they were out in the open?

MR. BADALICH: That is correct.

MR. STEIN: Are there any other questions or comments?

Well, I would like to bring one up and have a little further edification on this, and that is that regional approach. I think your statement on this is pretty candid, but when you talk about the disadvantage, the disadvantage means that you are going to postpone completion of the treatment works from 1973 to 1975, and that is a 2-year delay. Now, that is not a modest disadvantage, it seems to me.

Throughout the country we are about 1973. I think the other States can look at that date, which has been the completion date for putting their works in in compliance with this round of standards that we are having in the States. I would like to get some comment on the appropriateness of a 2-year delay on this.

How much time did we give them in the first place?

MR. BADALICH: Mr. Chairman, let me reiterate on that a little bit. This is sort of an outside date that was given by the consultant on the basis of the preliminary report that was presented. I don't think this is an actual, factual date, because before the organization NEMDA can proceed any further they have to get the enabling legislation or at least creation of a sanitary district through some legal means.

Once this is done, immediately they will start proceeding on time schedule, preliminary plans, and so on. So whether 1975 is the date or late 1974, at this time, I don't think we can positively state other than we feel this would be the maximum time that could be allowed, or would even be contemplated in this massive construction.

MR. STEIN: I understand what you are saying, Mr. Badalich, but again in the consideration -- and I am just talking about Federal people -- in the acceptance or nonacceptance of this, I think the key point is going to be how much of a delay this is going to bring about. If you are just talking in terms about a 3-month delay in preliminary plans, it would seem to me that you may want to look at this again because there may be some padding -- and I know we all do this when we prepare plans and specifications or a proposal -- in that last date.

I think the crux of this matter, at least from acceptability from the Federal Government standpoint and one of the major issues is going to be what kind of a delay this is going to be. Now, I think originally -- what was it, a 4-year program that we gave at the first for a cleanup?

MR. BADALICH: Yes.

MR. STEIN: And to add another 2 years would extend the time 50 percent. This is a considerable delay.

MR. BADALICH: That isn't quite true, Mr. Stein. After all, we had to wait almost 2 years for the Federal Government to approve our interstate water quality standards. This was approved in late 1969, although we started a year before that in issuing compliance schedules, and so on. So I don't think it was a 4-year program. As far as Minnesota is concerned, it is a 3-year program.

MR. STEIN: And you are ready in 2 years for the 3-year program?

MR. BADALICH: As a maximum.

MR. STEIN: That seems to me quite a bit of delay that you are proposing here; if you are proposing this as a 3- to a 5-year program, this is pretty significant.

MR. BADALICH: Well, the stage of all of the dischargers now located within the Lake Superior Basin -- their state of compliance now is the submission of preliminary plans, and this would have been accomplished either in March or April of 1971. Following this comes the normal procedure of approval and from there we get into the design engineering. So that by late this year or early 1972, they would be under construction on individual facilities, and this would be accomplished, according to our interstate water quality standards, by November 26 of 1973 for all dischargers.

The problem here is that in order for all of the dischargers to meet this regional approach -- and here again this is one thing that I believe we have endorsed the regional approach on all our basin, and I think it has been clearly stated by EPA that this is also the approach that should be used to all river systems in the United States -- so in all fairness to the municipalities and industries involved in this area, we have declared more or less a 6-month moratorium on the preparation of the final plans until this matter of establishing of a sanitary district can be accomplished. Following this, which will be July 1, at the maximum, as the time that any law that is created or enabled by the legislature will take effect, and if there is no enabling legislation at that time, well, then, immediately the discharger will have to proceed on an individual basis and catch up so that the final completion date of November of 1973 is also accomplished. Also if the sanitary district is created, well, then, in turn we will work out a schedule, and I am saying that that is a possibility because of the complexity of this large treatment facility which will treat up to 60 million gallons a day, plus 20-some-odd-mile interceptor that we feel that it probably will be necessary for 3 years of construction. Or maybe this can be shortened to 2 and a half years. We don't know.

We know that concurrently the interceptor as well as the regional treatment facilities can be constructed. But here again we don't know, at this time, what the extent of engineering and construction might be. It could maybe be shortened to 1974, but at this time I just can't state that.

MR. STEIN: I would like to ask Mr. Mayo if he has anything to add. I am going to suggest if we are going ahead with this plan, or proposing this plan, the kind of extension you have, we have to be very careful and not get into numbers here. You talk about a 6-month extension. Then in your report you said reports required by March 1, 1971, but it is anticipated that they need 3 months. March to April is one month; 3 months beyond April is another 4. We get to 4 months. Then, in the proposals, it becomes 6 months, and before we know it we are up to 2 years.

Now, I think if we are going to do this, and put this before the Federal people, we are going to have to really come up with a plan that is going to try to pare things down. Our regional approach doesn't necessarily mean an integrated system if it is going to take more time.

MR. BADALICH: Mr. Chairman, I think you have got to realize, too, that in the event this is created, we are certainly going to have the NEMDA organization -- or whatever this sanitary district might be called -- we will have them under stipulation, and I am sure there are going to be some interim measures that they have to continue to do and provide. It is a very good possibility that maybe during an interim period, for example, the city of Duluth, which handles primary treatment now -- maybe they will have to begin to use chemicals or coagulation to provide better treatment. That can be worked out.

But at this point, before this district can be created, it is just anybody's guess on what some of the mechanics of this is.

MR. STEIN: Mr. Mayo.

MR. MAYO: By way of comment, Mr. Chairman, we had the opportunity about a month ago to review the NEMDA proposal with the consultants. Mr. Purdy was present, and Mr. Frangos was present.

As I understand the key factor that is involved here is that it is proposed that there be a bi-state district. Neither of the States now have enabling legislation to permit such a district to be created.

I think Governor Lucey a little earlier this morning indicated that such enabling legislation is being introduced in Wisconsin. I don't know whether that kind of legislation has yet been introduced in Minnesota.

MR. BADALICH: No, it hasn't, but it is being formulated.

MR. MAYO: The nuts and bolts in Mr. Badalich's proposal here is that we permit the communities, until July 1, 1971, the opportunity to resolve the legislative needs, in terms of enabling legislation, and the organizational needs for the creation of the district. Failing the accomplishment of either of these, I think particularly the accomplishment of the enabling legislation, there would be no relaxation on the current November 1973 target date. But with the accomplishment of the enabling legislation and the creation of the district by July of 1971, that very serious consideration may be given to the regional plan that has been proposed and an appropriate implementation schedule at that time, which might or might not require until 1975 to accomplish. And we are very concerned about that kind of an extension of the time, and we would be particularly critical of any indication that a stretchout was being proposed more as a matter of convenience than as a matter of necessity.

So I think that the interim period for the achievement of the enabling legislation, which is probably not an unreasonable one -- but failing that accomplishment, there should be absolutely no relaxation on the November 1973 date.

MR. STEIN: I understood that in the original thinking.

MR. BADALICH: This we have agreed to, Mr. Mayo.

MR. STEIN: I understood that in Mr. Badalich's presentation. But the issue that I raise -- and I think it is fair to say that the States and the State legislatures need a clue on this -- if they get through this enabling legislation, is the Federal Government going along with this?

Now, I think they need this before they go on. I fully understand the proposal. The question, I think, I was trying to get a notion on and that we have now, is for the States at least to make an effort to make a presentation to us to get every bit of water out of that schedule, so that we would have a tighter schedule for completion, because I think you are entitled to some kind of agreement from the Federal Government as to whether you are going to go with this or not.

MR. BADALICH: I think following the enabling legislation if we should be successful, I would very definitely want the input from the conferees and the Federal Government and everyone else, to help us along on this to see what would be a reasonable date. We are not going to do this unilaterally. We have to have your support.

MR. STEIN: Maybe I am not making this clear. We are not going to open the door or get the camel's nose under the tent by stages. We have a program agreed upon, and we have to come to an agreement whether this is a reasonable approach to extend this for 2 years. The point is that passing enabling legislation does not give you a moral largess or an agreement from the Federal Government that we are going along with this proposal. You should know this before we start so we don't get into any problems after you have your legislatures to pass the bills.

MR. BADALICH: Well, do you think, at this point, Mr. Chairman, that the 6-month extension we have given on these interim dates is a reasonable request?

MR. STEIN: Well, the point is, as I read your proposal, if the legislation fails that you are not going to fail to meet the final dates.

MR. BADALICH: That is correct.

MR. STEIN: And in light of that, I wouldn't think that your judgment here is wrong.

However, I would say that you have no assurance nor do I have any assurance yet that we are going to get the green light from the Federal officials on allowing a 2-year extension for a cleanup.

MR. BADALICH: Well, at this point, what I am stating, Murray, is that this is probably the maximum time of extension, but I think when we get into the point of developing some realistic approach to this on what should be a nominal schedule for compliance or for completion of this project, certainly we are going to ask for your concurrence and your ideas, and so on.

MR. STEIN: What I am saying, John, is that I think if you can come up with this realistic answer or proposal beforehand, before you go through to this June or July and we can get a reading on this, we will be a lot better off than waiting until you have this, because this is going to put you in the posture of getting this through.

Now, let me tell you: I know times are difficult. and I hope something like this can work out. But if you go to the Kansas Cities now, you will find two waste treatment plants across the street from each other -- two big ones, multimillion dollar plants -- one in Kansas City, Missouri, and one in Kansas City, Kansas. And the reason they are there is because they could get the legislation through one State legislature but not the other, and they couldn't put them together, and this is not always the easiest thing to do.

Now, I know; I worked with that. When you put these things together and they either go or they don't go, you come up for considerable sacks of money. I am sure if we could have built one plant in the Kansas City area, we could have saved a lot of money, and not have two plants opposite each other across the street.

But I think the closer you can get Federal-State agreement at the earliest stage of the game the better off we are going to be on these projects. Because -- let me again state possibly something that I see 6 months down the road, then we will let you go.

Let us assume, for the sake of argument, that both

State legislatures pass the bill, and let us assume that you come up with a plan that at that point the Federal Government will not agree to. I think we put ourselves in a confrontation position that I would like to avoid at all costs.

MR. BADALICH: So would we very definitely.

MR. STEIN: That is right. Therefore, I think we should try to get the problems or the potential problems, or the questions that Mr. Mayo and the Federal staff are going to ask, before we go much farther down the road and not wait until the legislature has got this. Because then we may have passed the point of no return and this is what I would like to avoid.

MR. BADALICH: Isn't this the purpose of our conference today --

MR. STEIN: Right.

MR. BADALICH: -- is to try to arrive at something? So why can't we discuss it sometime during the course of this conference?

MR. STEIN: Well, what would you think, Mr. Mayo?

MR. MAYO: Could we discuss the details of the plan?

MR. BADALICH: Well, that seems to be what Murray is getting at. It seems to be premature. I am certainly not going to go ahead and do this unilaterally without the support of the conferees and the support of the Federal Government.

MR. STEIN: That is right. How do we approach this?

MR. PURDY: I am ready to make a comment, Mr. Stein.

MR. STEIN: Right. Yes.

MR. PURDY: Well, in the review of this project, Mr. Stein, it is my understanding that it is a favorable project on an intrastate basis. That is, the economies of scale, and so forth, are favorable from the standpoint of the regional system within Minnesota alone. So if the interstate problem of legislation should be a stumbling block, it would still not cause the failure of the total project.

Now, on the assumption that if the total project would fail that there is no delay in the 1973 date, I think the regional system offers some distinct advantages and also that when you go into the details of the project, that possibly there are things that could be brought into play early in the period. For example, the treatment works could be constructed to provide the higher degree of treatment for Duluth. As I understand it, it is going to be at the site of the present Duluth plant, while the interceptor -- and be in operation while the interceptor is being constructed. Possibly not all parts of the project would take the same 3-year construction period.

In addition to that, it is my understanding that if the State of Minnesota should proceed on the present stipulation and that separate treatment facilities are built at all locations, that from the standpoint of the resulting river water quality that this would only bring you to an interim objective at the present time.

MR. BADALICH: That is correct, Ralph.

MR. PURDY: And that if the regional system goes through, that it would in one step bring you to your objectives for water quality in Lake Superior, and also within the St. Louis River. And to me this is a very distinct advantage, and if this can be done in a reasonable length of time by extending this 1973 date, I think it would be a shame to proceed on the interim project and not obtain your full goal.

MR. STEIN: Right.

Now, again, I don't know if Mr. Mayo wants to talk to this, but I think what you have pointed out ~~is~~ providing the answers, or at least answers I think I can go with to some of your questions.

I think the question answers this: When you are talking a year or two extension, and two may be the maximum. you are not talking about this for the complete project. This was when every last jot and tittle would be completed. But before that a lot of the works would be in and we would have water improvement before that. Is that correct?

MR. BADALICH: That is correct.

MR. STEIN: That is the understanding I had. And if we do that, 1) you are going to have the standards being met in one fell swoop, and 2) you are going to have the advantage of no effluent going into the St. Louis River.

MR. BADALICH: Right.

MR. STEIN: And there is only one thing that that could do with the St. Louis River and that is going to help. I surely don't want to come up here on a mercury case. The St. Louis River, as far as I know, in this case has always been a polluter. It is an interstate stream.

MR. BADALICH: It has been in bad condition, yes.

MR. STEIN: That is right. So I think these are the advantages. But I think the key point that we should try to zero in on is all these points and the notion that you are not going to have this delay for the whole project for an improvement to take place.

The improvements will be phased in from a period, say, from 1973 to 1975, and that there will be significant improvement, say, during that period, and you can schedule it. But by 1975 we will have met the standards, and if we went with the other plan, the probability is -- and if you finished the work in 1973 -- that you wouldn't completely meet the standards until maybe 1975 completely anyway, if then.

MR. BADALICH: That is a very good possibility especially in the Cloquet area.

MR. STEIN: That is right. So, therefore, if you consider making a presentation, you may want to consider emphasizing some of these points, or the conferees may want to consider them.

MR. FRANGOS: Just a few observations. We generally concur in the assessment of the situation that both you and Mr. Purdy made. We are always faced with this question about whether you are delaying abatement, and we can plan for all kinds of savings -- pollution may continue for half a dozen years -- and we are anxious to avoid that kind of a situation here.

Our position in this is -- as it relates to the city of Superior -- that under our law there doesn't appear to be a prohibition in adjoining across the line in some kind of a venture. But one of the questions that we would be concerned about is whether we would give a State grant to a foreign entity, but we would concur with --

MR. STEIN: I thought you just considered the Feds foreigners. Join the club, John, you are in, too.

MR. FRANGOS: But I think we would very much support this kind of a consideration by the conference, including the reservations that you went over, Mr. Stein, that we would use this 6-month period with the understanding that these time schedules would be refined the next time that we convened, and that we all agreed on the principle that we did not mean by any action that we take here that we would be extending or delaying any remedial action for a period of 2 years.

MR. STEIN: By the way, your point is very well taken about having a public entity outside the State, and these aren't easy to handle. With the best will indeed to make financial contributions, as we have learned to our sorrow in the Washington, D.C. Metropolitan Area. You get a legal opinion that is against you and there is no way you can move, whatever you want to do. It is the hardest thing to get money across the State line through another jurisdiction in a Public Works program. This has to be considered very, very carefully indeed.

The jurisdiction can do this by contract itself presumably, but once public funds are involved, particularly State or Federal funds, where we have an allocation, we are bound by all kinds of restrictions.

MR. FRANGOS: Yes. And I would follow up on that with a comment that we have expressed a concern when we discussed this amongst ourselves—that even this 6-month period is very ambitious in terms of nailing this proposal down, unless there is a maximum effort. I can't be too optimistic that this thing is going to go, but we would like to pursue it and we think there is considerable merit.

MR. STEIN: Wait a minute. You have given yourself a deadline, as I understand it. When is it, July 1st?

MR. FRANGOS: Yes.

MR. STEIN: To get it through the legislature. Do you think that is realistic?

MR. BADALICH: Whether it is realistic or not, we adjourn sometime the latter part of May.

MR. STEIN: I know your States do a lot better than we do in the Congress on the Federal level. But there is no business that you just keep hanging on, and think we are going to have the maximum day and the next day and the next day.

MR. BADALICH: Well, under Minnesota law, Murray, the State or the municipalities certainly have the right to create a sanitary district under the Joint Powers Act. They also have a right to create a sanitary district by petitioning our Agency, but you know in an area like this where you have got possibly 25 or 30 different entities, you are going to have a devil of a time trying to get unanimity on a Joint Powers Agreement.

MR. STEIN: John, if you want this stricken from the record, I will be glad to do it. But, you know, we were up and down this mountain with Minneapolis-St. Paul how many years?

MR. BADALICH: It took 10 years, and five legislative sessions.

MR. STEIN: Ten years of five legislative sessions.

I don't think I have ever been in a more frustrating Alice-in-Wonderland situation in my life, and I hope you are going to do a little better here.

MR. BADALICH: Now, we have got nationwide recognition on it, Mr. Stein.

The other thing, Murray, I would like to bring out, too, is: I am a little fearful of what would happen in the event that this sanitary district wasn't created, in light of the philosophy the Federal Government has now on river basin planning, and the construction grant program being contingent upon this. Would the Federal Government go ahead and fund all of these municipalities on an individual basis when we know the regional approach is the only approach in this particular area, and this would go against your own regulations, your own philosophies for attacking the pollution control problem? Do you propose this will succeed so we can work from there on and resolve this matter?

MR. STEIN: Let me answer the question as I see it here. Having a regional approach does not always mean that you are going to be in one integrated system. There can be a regional approach with individual plants.

MR. BADALICH: Oh, yes, very definitely.

MR. STEIN: And I would hope that even the existing plan is a regional approach. For example, I think, to go back to that example I used before -- and I think I was using it as a horrible example -- you might say the Kansas City operation is a regional approach. These guys were both sharp because the hydrology of the region got them to put the plant at exactly the same place. The trouble is they couldn't put them together.

But looking at the way that operates, that is a regional system because you are following the normal flow of the land, and both of them came to the same conclusion where the plant should be. It is just it is not one. In other words, it doesn't have to be one plant to fit a regional approach.

MR. BADALICH: Well, except also, Murray, we would like to go along with the philosophy of the Federal Government: we also want to enhance our waters and here is a very good opportunity to do it.

MR. STEIN: Are there any other comments on this?

Again, I wish the conferees would think about this. This is going to be a rather difficult thing to formulate and handle. I wonder, Mr. Mayo, if your staff and your group -- if you could think about this and possibly if there is some appropriate action for the conferees, we can come up with a proposal for the consideration of the conferees at the end, where we can move this forward or at least move it to some point where we can get a resolution one way or another.

Okay. Is there anything else?

MR. BADALICH: There is nothing else, Mr. Chairman, insofar as the Agency's presentation, but I do have a list of 14 or 15 witnesses along with Reserve Mining Company to make a presentation.

MR. STEIN: Well, I tell you, we are going to let them get stronger by eating your wonderful food, and we will recess for lunch and reconvene at 1:30.

(Noon recess.)

- - -

AFTERNOON SESSION

MR. STEIN: Let's reconvene.

Mr. Badalich.

MR. BADALICH: Thank you, Mr. Chairman.

As I indicated before the noon break, the Pollution Control Agency had finished their testimony at this particular time. I will call on those persons indicating a desire to be heard, and number one on the list -- this, again, was received on the basis of the requests coming in by mail, so I will call first upon the Minnesota Environmental Control Citizens Association, MECCA, which is represented by Mr. Grant Merritt.

STATEMENT OF GRANT T. MERRITT
MINNESOTA ENVIRONMENTAL CONTROL CITIZENS ASSOCIATION, MINNEAPOLIS, MINNESOTA

MR. MERRITT: Mr. Chairman, conferees, and ladies and gentlemen. My name is Grant Merritt, and I have appeared at the previous sessions of this conference on behalf of the Minnesota Environmental Control Citizens Association.

MECCA has participated in the four previous meetings of this conference and is pleased to again have the opportunity to present a statement to the conferees.

We are hopeful that the conference will finally take positive action to end the pollution of Lake Superior from all sources and adopt onshore disposal for Reserve Mining Company. We in Minnesota are proud that a portion of this great lake is within our borders. It is the hope of all Minnesotans that this magnificent lake shall forever justify the name Superior.

MECCA believes we can prevent Lake Superior from becoming a Lake Erie if we act now. We are pleased by the strong plea stated this morning by Governor Anderson for onshore disposal. We are also pleased by the full support and agreement given the onshore disposal plan by Governor Lucey at the press conference this morning.

In a few minutes, I would like to call on Charles Carson to present the specific position of MECCA.

MR. STEIN: Mr. Merritt, I have listened to both Governors. I didn't hear them ask for onshore disposal.

MR. MERRITT: Yes, Mr. Stein, at the press conference this morning at 1:30 --

MR. STEIN: No, they were here on the record. I didn't hear them ask for onshore --

MR. MERRITT: Governor Anderson did call for onshore disposal.

MR. STEIN: Where?

MR. MERRITT: In his statement this morning. Well, he did if you will check the record.

MR. STEIN: I will have the record checked.

Let me ask you: Why do you think onshore disposal would be less damaging to the ecology, or do you think we should go to the method that is less damaging to the ecology?

MR. MERRITT: If we adopt some plan which provides for continuing discharge or dumping into Lake Superior, we have no assurance that after 5 years or any length of time that that plan will not continue pollution of Lake Superior. If we adopt an onshore disposal plan, there will be no further dumping in Lake Superior, and as the Governor has pointed out -- Governor Anderson -- this will solve the problem.

MR. STEIN: He didn't point that out at this conference, but let me make --

MR. MERRITT: He did. I beg to differ.

MR. STEIN: Let me make this point. We never substitute, for example, an air pollution problem for a water pollution problem. We don't intend to go with any problem that is going to give us a bigger problem with the ecology, and I didn't hear either Governor say this.

Why do you limit us in what we can do to protect the ecology? I don't quite understand you.

MR. MERRITT: Well, the point that you raised, Mr. Stein, is one that Reserve Mining has raised at previous sessions of this conference, and that is that supposedly an onshore disposal system would result in some kind of pollution of Lax Lake or of the area over the hill and behind Silver Bay. I don't think that followed --

MR. STEIN: Well --

MR. MERRITT: Just let me finish, Mr. Chairman.

I don't think it followed that there would be any greater pollution problem if we adopt onshore disposal. Quite the contrary, the lake would then be restored and preserved.

MR. STEIN: I am not saying there would be a greater pollution problem. What I am saying is: I don't think that I heard either Governor or Governor Milliken, whose message we heard, come out for any method of disposal. I would suggest that in dealing with Reserve Mining, if the company is going to stay in business -- and I hope we can keep them in business -- we come up with a method that will provide the least damage to our ecology. Shouldn't that be our goal?

MR. MERRITT: Well, let me again state very clearly that the Governor of Minnesota this morning -- as the record will clearly indicate -- favored onshore disposal for Reserve Mining Company. Governor Lucey in the press conference that was held right after the two Governors appeared at this morning's session stated he was in full support of onshore disposal for Reserve Mining. And I think that is very clear on the record at this time. (Applause)

MR. STEIN: The record can show applause, but as far as I can see, I have been sitting here listening to the record and I haven't heard it.

MR. MERRITT: I would suggest --

MR. STEIN: You can keep repeating that and saying this, but I have listened to this very carefully by the Governors, and I did not hear this.

Now, again, I don't get your rationale. If we are going to protect the ecology of the lakes, and we are going to look at the best method of the ecology of this planet, what this magic is of onshore or offshore disposal or what your problem is here, I don't understand your rationale, Mr. Merritt, and I would like to hear it.

MR. MERRITT: The rationale --

MR. BADALICH: Mr. Chairman.

MR. STEIN: Yes.

MR. BADALICH: The Minnesota conferees do disagree with the Chair, and we believe the Governor also stated that the method because of the public concern would be an onshore disposal system. (Applause)

MR. STEIN: Well, I think the record will speak for itself. Go on.

MR. MERRITT: I would like to just say one final word about the problem we face, and then Charles Carson will present the specific proposals that MECCA has for the conferees and the reasoning behind them.

We believe these proposals, if they are adopted and enforced, that the majesty of Lake Superior's oceanic expanses will be restored and preserved for posterity. We believe that the public will support this action. We fail the people if we continue the delays of the past, and we have had too many delays so far in this conference.

Past failures have eroded public confidence in the ability of any government to reverse the awful desecration of our environment. Certainly none of us in MECCA -- we have tried to make this point clear at every session of this conference -- is antibusiness. We do not favor shutting down the plant. We have stated from the very outset that what we want is an order now, and then give the company 2 years or 3 years, or whatever it is, to build, to design and build the onshore disposal facility and this needs not cost anyone the loss of a job.

Thousands of concerned citizens are watching your efforts here today and tomorrow. Let us have the will to move now to stop the pollution of this great lake.

It is now my pleasure to introduce Charles Carson.

MR. STEIN: Just a minute, Mr. Merritt.

Let's see if we can get an answer for the next question.

MR. MERRITT: All right.

MR. STEIN: Because we want to proceed on scientific evidence.

The point is: If we are going to deal with the disposal of the tailings, we want to put them where they are going to do the least ecological damage. I don't want to make a prejudgment on the basis of emotion or anything else.

Now, if we are precluded -- and you talk about onshore disposal -- the scope of our operation is limited. On what basis do you say this if there is a basis? Or what magic is there to do this?

I am not saying that onshore disposal may not be the way to do this. But what I am saying is: If we adopt your premise, to keep the company in business, it seems to me that we have to put these tailings in the place where they will do the least damage to the ecology. And I hope we will not move into this with preconceived notions or conceptualism. We will let them all stand up.

Now, unless there is a foundation or in the law something upon which to predicate this and we have a notion that we shouldn't put something somewhere, I don't think we should proceed on that basis. We have to figure where these wastes will not harm the environment.

MR. MERRITT: Let's start with the onshore disposal facilities as far as worrying about keeping the company in business, which you mentioned, Mr. Stein.

MR. STEIN: You said that; I didn't.

MR. MERRITT: Well, you just mentioned it.

It is our judgment, based on the studies that have been conducted so far, that the company could well afford to build the onshore disposal facilities, that the cost would not be prohibitive, and that the profit of the company is sufficient to take care of that facility.

Now, if we are to wait for a further plan of some kind of limited or additional dumping in Lake Superior, we take the risk that whatever flocculents are added will themselves pollute the lake, that the fines will not settle down to the bottom of the Great Trough or will not stay within the 3-mile zone, and we may end up 5 years from now in a conference something like the conferences that have dragged on, on other waters of this country.

MR. STEIN: Like what?

MR. MERRITT: Like the Mississippi River.

MR. STEIN: What conference has dragged on, on the Mississippi River?

MR. MERRITT: A number of conferences of 5 years --

MR. STEIN: Let's --

MR. MERRITT: Just let me finish.

MR. STEIN: Let's be specific. What conference has dragged on, on the Mississippi River?

MR. MERRITT: The Potomac River conference has gone on for years.

MR. STEIN: Is that close to the Mississippi? Are you shifting your ground, Mr. Merritt?

MR. MERRITT: No. I wish you would let me finish.

MR. STEIN: I asked you. You raised the point. The question is: You said the Mississippi River.

MR. MERRITT: That is right.

MR. STEIN: Do you want to talk about the Potomac? We will talk about it.

MR. MERRITT: I want to talk about what could happen here, Mr. Stein, if we adopt some halfway measure which may or may not work -- we don't know -- we come back in 5 years and find out that the program won't work, that the tailings are still destroying the aquatic life, that they are stimulating bacteria, that they are stimulating algae, or that they are affecting adversely the overall ecology of the lake, and continuing the green water, where have we been? We have been in conferences for 5 or 10 years.

Instead, we now have a solution which is feasible, which the company could afford, which will solve this problem once and for all. Why don't we look at that instead of waiting for some kind of halfway measure that Reserve will come in with?

MR. STEIN: Let me raise this point with you again, because I think you are missing it: No one has talked about the company not being able to afford it or anything of this sort, and if I had the choice between keeping the company in business or of preserving Lake Superior, I know what choice I would take.

The issue here is: If you put this stuff on the land, whether you would be creating a greater damage to the ecology than putting it in the water. This is not a question of what it affords.

Now, I have made no prejudgment on this, but I don't see that we have the basis or the evidence now to indicate that I have seen up to now that placing this material on the land would be less of a damage to the ecology than putting it in the water.

Now, if it is -- if it is -- I think we should go for this. But I don't think, in the absence of scientific judgment, in evaluting one of these against the other, that we should make an emotional judgment on which way we go, and we have had this over and over again in placing material on land, in dumping material in the sea, in taking material out of the water and sending it up a smokestack. I think we have a proposition here where we have to evaluate a program that is going to do the least damage to the ecology wherever we can do it.

What bothers me is before we start on this and make the scientific evaluation, we already are circumscribing our choices by deciding from a theoretical or a notion on the basis of possible principle, allegedly, or emotion, that we are not going to allow a certain kind of disposal.

And I am not sure you are doing yourselves or the people of this region, or the people living around Lake Superior, or the people in this country a service when you limit our choices that way before we have the evidence.

MR. MERRITT: Now, if I may reply, Mr. Chairman - and I appreciate your points -- but I think you are equating -- and the trouble with what you are saying is that you are equating the ecology of Lax Lake or of the area behind Silver Bay with Lake Superior. There is just one Lake Superior in this world. It is a magnificent resource. It is the largest body of freshwater in the United States and one of the largest in the world.

It provides, as you well know, an inspiration for people throughout Minnesota and throughout the United States.

Now, the question is shall we clean up Lake Superior? Shall we save Lake Superior? And that is the issue before this conference.

Now, by adopting onshore disposal and moving the tailings back to a stilling basin that was proposed by the Stoddard Report, when this whole controversy began, we aren't going to destroy the ecology of Lax Lake. But suppose we did destroy the Lax Lake area or a portion of Lax Lake? There are a number of Lax Lakes in this State and in this Nation, but there is only one

Lake Superior, and I think we are here today and have been for nearly 2 years now in this conference proceeding, trying to save the ecology and the priceless resource of Lake Superior. So I can't accept your equation of the ecology of the region behind Silver Bay on the same terms with Lake Superior.

MR. STEIN: Mr. Merritt, I just wish you would look at the record, and listen to what I said.

I said, and my words -- I think I can quote them -- but something that would do the least damage to the total environment. I didn't mention Lax Lake or equate Lax Lake with Lake Superior. The only way we got into that is you said I did. But not only was that a misinterpretation of what I said, but entirely contradictory to what I said. And if we are going to have a useful dialogue, I think we have to accept what we say -- either one says -- at face value. You can't turn what I say to the opposite and expect to have an intelligent conversation.

MR. MERRITT: Well, there can't be any harm to the ecology of Lake Superior if we stop the dumping from the source at Silver Bay by Reserve Mining, and from all of the other sources. So, therefore, I think that is a proper interpretation of what you said, Mr. Stein.

I think if we stop the dumping we end the problem at Silver Bay and we do the same thing about the other sources of pollution on this lake -- and there are some 40 or 45 point sources of pollution on Lake Superior -- and certainly we do solve the problem if we stop the dumping entirely, and that is our position now, has been in the past, and will continue to be. (Applause)

We do have a written statement, Mr. Chairman, and we will circularize it to all of the conferees.

Dr. Carson is a member, in fact chairman of the policy committee of MECCA.

MECCA met last night and adopted this statement, and at this time I would like to present for your consideration the statement of MECCA and Dr. Carson.

MR. MAYO: Before you leave, I would like to ask a question.

I gather from your comments that MECCA has come to the subjective conclusion that in order to accomplish onshore disposal of the tailings as a means of preserving the integrity of Lake Superior, that whatever that environmental price might be for onshore disposal, it is a tolerable price.

MR. MERRITT: That is correct. This is precisely right, Mr. Mayo. Thank you.

Dr. Carson.

STATEMENT OF DR. CHARLES E. CARSON,
ASSOCIATE PROFESSOR OF GEOLOGY, MECCA,
ST. PAUL, MINNESOTA

DR. CARSON: Mr. Chairman, conferees, ladies and gentlemen. I would like to read MECCA's brief formal statement on this problem.

It is with great satisfaction that MECCA and other conservation groups note the formal joining of the Lake Superior Enforcement Conference by Governor Anderson. This action now resolves any doubt the conference lacks jurisdiction or that tailings pollution is interstate.

MECCA has filed a formal statement on the matter of pollution in Lake Superior at every conference held since 1969. Until now, however, all the testimony of MECCA, other conservation groups, and Federal scientists has fallen short of achieving our goal of reversing the degradation of Lake Superior.

It is our hope that the formal action of the Governors and the call of the Governors for onshore disposal will herald a new and serious effort to actually stop pollution of this great lake. But the Governors alone can do little without public support, and support of this conference. We urge that support. Experience in this matter cautions us to remain vigilent. So far, pollution continues; Reserve Mining still dumps its tailings into the lake, a harsh and fundamental fact which cannot be ignored. Because of this fact, therefore, the board of directors of our 3,500 member organization have directed the following statement to be made at this conference:

We cannot afford complacency simply because the State has now formally joined the conference. There have been many delays and subterfuges on the part of polluters before and there is little reason to expect the same tactics will not be tried again. Scientific testimony at previous conferences has shown that taconite tailings encourage the growth of harmful bacteria in the lake and algae which will accelerate its eutrophication. Reserve has responded to these concerns with delays, threats, bogus testimony and intentionally preposterous "solutions." In light of this record, MECCA strongly urges the conference to support Governor Anderson's call for onland disposal. There should be a definite timetable for completion of onshore disposal facilities backed by a suitable surveillance system and prompt penalties for failure to comply.

It is our considered opinion that any disposal systems whereby taconite tailings will still be dumped in the lake will only provide the means for further degradation and the possibility of subterfuge. If no tailings go into the lake, then these possibilities are automatically ruled out, at least as far as Lake Superior is concerned.

The proposal to flocculate tailings fines has not, so far as we are aware, been tested in any pilot project here. There is no assurance that it will work, no assurance that the flocculent would not itself become a colloidal pollutant itself, and no very feasible way to monitor such an operation. And we can be assured that if any such facilities are built and then found inadequate, Reserve will naturally be loathe to make any further changes, claiming, no doubt, that they have made a sincere effort at great expense, and that all objections spring only from ignorance or ill will.

Finally, as we have made clear many times, MECCA has no wish to see Reserve Mining Company closed down. And there is no reason to believe that this is even remotely necessary. However, they cannot be allowed to continue as they have in the past. Changes will have to be made in the public interest.

Also, we recognize that Reserve Mining is not the only source of pollution in Lake Superior. There are others. To assist in their identification, MECCA urges this conference to the adoption of effluent standards rather than simply water quality criteria. In this way, pollution sources can be pinpointed and the public will not be wondering where it all comes from after it gets into the water.

Thank you. (Applause)

MR. STEIN: Thank you, Mr. Carson.

I think it should be pointed out that the majority of the conferences we have had have adopted effluent standards including this one for other sources in the lake.

When we talked about effluent, secondary treatment, reduction of phosphates, chlorination of the effluent, we were talking in terms of effluent standards.

DR. CARSON: I see.

MR. STEIN: Are there any comments or questions?

Yes, Mr. Purdy.

MR. PURDY: So that there is no misunderstanding here, in your statement, Dr. Carson, you mention about fully joining this conference. I have represented Michigan at all sessions of this conference, and I want to assure you that Michigan fully joined this conference on the date that the first one was held, and from my standpoint there was never any doubt in my mind that Michigan would participate in decisions of this if there was a finding of interstate pollution from any source including that of Reserve Mining; and the telegram that Governor Milliken sent out only reaffirms this position. It does not mean that Michigan was not a full partner in this conference prior to this date.

DR. CARSON: I am sorry. I was misinformed in respect of that.

MR. PURDY: Now, in your statement, you have made some reference here to testimony and what it has shown, and since I am from out-of-State, I did not have an opportunity to follow closely what took place in the way of testimony at the court appearance, or at the court case here in the Sixth Judicial District, and I am wondering if you are acquainted with the testimony.

DR. CARSON: I am not acquainted with that record. I was referring to what has been presented here at the conference in past sessions of the conference.

MR. PURDY: It was my understanding that there were some 6 or 7 weeks of scientific testimony presented at that, and I wondered whether this conference had some particular testimony available to it that was not made available to the court, because the court's findings seem to be in somewhat a different light than your interpretation here.

DR. CARSON: Well, I can't speak for the court. I am only referring to what has been presented here.

MR. PURDY: Thank you.

MR. STEIN: Any other comments?

MR. BADALICH: Mr. Chairman, I think for the record it should be noted that the State of Minnesota, as part of its Water Quality Standards does have an effluent requirement, and this is our means of enforcing or seeking compliance.

DR. CARSON: That is right, and I didn't mean to imply otherwise. All I wanted to do was emphasize the fact that this should be emphasized further because we don't -- MECCA does not want to see the adoption of the mixing zone standards or any relaxation of WPC-15. I realize that is what the court litigation is all about.

MR. BADALICH: Thank you.

MR. STEIN: Are there any other comments or questions?

MR. MAYO: I have a question, Mr. Chairman.

In your statement, Dr. Carson, you refer to the testimony that has been given on the impact of the taconite tailings on the growth of harmful bacteria in the lake and algae which would accelerate as a consequence of eutrophication.

Again, I gather it is the position of MECCA that the only approach that can be taken to the elimination of the opportunity for harmful bacteria or for the acceleration of eutrophication is onland disposal exclusively.

DR. CARSON: Well, there are always possibilities, but I think I would have to say yes. Yes, so far as we have been able to tell from all of the alternative proposals that have been presented by Reserve and other testimony, this really probably is without question the best possible solution. Therefore, it is our position that that should be -- any disposal should be restricted to onland disposal.

MR. STEIN: Any other comments or questions?

MR. BADALICH: Mr. Carson, are you aware of the proposal that will probably be presented by Reserve this afternoon?

DR. CARSON: I have heard something about it. It has to do as I understand with flocculation of these fines, the fine fractions in particular, and then they are transferred to a deeper position of the lake. I haven't read it in detail. I haven't seen a copy of it.

MR. BADALICH: I would take it from your testimony, then, that you would reject this proposal.

DR. CARSON: I would be very wary of it, yes, for the reasons stated here.

MR. STEIN: I understand this.

You see, here is the problem I have with that. If you haven't seen the proposal yet -- and I am not sure that I have either -- but before we make a judgment on it, let's say the difficulty is in making a judgment on a conceptual basis and events. If we are going to have an open mind at these things -- and this is what I want you to understand -- certainly no one is opposed theoretically to onland disposal. But the question here is that before the evidence comes in on a scientific basis and before we have had a full opportunity for discussion as to alternatives to limit the inquiry in this regard, it doesn't seem to me necessarily to be completely scientific or in accord with our system of fair play and due process that we have in this country.

In other words, if a guy wants to come up with a proposal this is fine. I have heard, for example, for years that an electric engine or a steam engine wouldn't work in an automobile. Yet before I left my hotel room this morning, I heard Lear Jet alleges a steam engine would be an answer to our air pollution problem.

Now, the difficulty that I have in the spirit of scientific inquiry in dealing with a real problem of the environment is to cut off any kind of proposal at the source before the thing comes in.

Now, if you can evaluate --

DR. CARSON: May I respond to that?

MR. STEIN: Yes. But let me finish.

If you can evaluate, if someone comes in with a disposal of the wastes in the lake, and if we relate that to, say, one, two, or three different kinds of land disposal, and the land disposal can stand up to that and be a much better method of disposal, that is the way to go. But to indicate before they come in and to let us take to all comers in advance, it seems to me that we are cutting ourselves back, and we are not really approaching this really with an open mind.

DR. CARSON: Well, I think, as I have indicated in the statement here, some of our attitude is due to past experiences, of course, with this problem, when there does not seem to have been a serious attempt on the part of Reserve to come up with a solution as there could have been.

I will admit that it is certainly remotely possible that some kind of in-the-lake disposal could be better than something onland. However, when you mention flocculation, immediately this has a definite scientific meaning, and you are going to have to flocculate these fines with something that itself is very small and possibly also much more reactive, undoubtedly much more reactive than the inert quartz fractions. So from what little bit I know about flocculents and colloid chemistry it seems to me it is going to be rather difficult to keep that material itself from polluting the lake. And also there is going to be some question as to whether these particles that are flocculated are going to be larger in colloidal size. If they are not, we are going to be right back where we started, and the lake waves and currents will continue to take the stuff down the shore, so this is the grounds.

We are not trying to be prejudicial against Reserve. These are the grounds for the statement.

MR. STEIN: Doctor, I agree. I am glad we have had this, because I agree with everything you said. You said -- let me repeat: You said that you agree that at least theoretically there is a possibility that possibly putting in the lake might be as effective as on the land. But unless the flocculent works and you have some very severe doubts about that --

DR. CARSON: That is right.

MR. STEIN: -- and I have some other problems. Now, I thoroughly agree with you on that. Now, the point is unless we can be satisfied that if you are going to take the job of putting a material in the lake and you are not going to have these tremendous safeguards and satisfy us, we won't entertain it. But we are saying the same thing.

In a sense, let me again just try to give you a rough analogy. I still remember when they used to say that if they meant man to fly they would have given him wings, and for years I felt safer on the ground. I worked for a boss for years who insisted on --

DR. CARSON: I still do.

MR. STEIN: -- insisted I take the train.

But the point is we were ready to go. We talk about onland disposal, because possibly we know more about that -- how to handle stuff that we can see and control onland -- than anything else. And there are many safeguards.

But when you wanted to fly, then you had to provide these extra fail-safe devices -- one, two, three systems -- and we do now have commercial aviation. Then, if you go up into space you get another dimension. We had to provide for further fail-safe systems. Now that doesn't say that theoretically that didn't work, because we got a man on the moon, and we got him back.

Now, what I would like to say and I think we both said is that we do not preclude necessarily any method of disposal where you want to put it in the air, on the ground, possibly below ground, or in the lake. However, if you are going to take your option that you want to put your wastes in the lake, you are going to have to satisfy everyone as to the nature of the flocculent. the nature probably of the recirculation, and the clarity.

In other words, like getting the program going for putting men on the moon, you are going to have to provide all these fail-safe features and systems -- features which are going to work, which you might not have to supply if you were going to just stay on the ground.

The point I am suggesting is, in our system of government, just because you might think it is going to be difficult to do this and I might think it is difficult to do this, we don't conceptually before the proposals are in reject this out of hand, on the basis on a philosophic principle that we can't accept it.

DR. CARSON: Well, we are willing to give Reserve a hearing, but we still call for onland disposal.

MR. STEIN: All right. (Applause)

MR. STEIN: You know, that comes very close to the motto of the old West "Hang 'em first and try 'em afterward."

I hope we don't do that.

MR. FRANGOS: Mr. Chairman.

Dr. Carson, if I can get you back down to earth here for a few minutes and more specifically on the land, my recollection from the previous session of the conference is that you had reviewed -- your organization had reviewed — some of the alternatives that were proposed by Reserve, had examined a number of alternatives on the land, and my recollection is that you did select one that you thought was preferable.

Now, has your organization done any more study or analysis that would give us your feeling on which one of these you think is the most satisfactory?

DR. CARSON: Not since the August conference.

At the August conference, as you recall, I presented our statement, which was quite lengthy, but we were unable to get on the agenda until late in the afternoon and most people had gone. But we did an analysis showing that Republic and Armco Steel, who are the controlling companies in Reserve, show a net returned annual income of $87 million, and the engineering study that had been conducted by, I think, the Bureau of Mines, showed that the onshore disposal system that they proposed would cost, I think, $7 million to build, in the first place, and $3.5 million thereafter to operate. So we felt on that basis that Reserve could well afford to adopt this particular kind of onland disposal. I don't rule out that there are others.

MR. FRANGOS: I am sorry. Which onshore method?

DR. CARSON: The dike method; restricting these things behind a dike.

MR. FRANGOS: At lake level?

DR. CARSON: I believe that was the point of the study, yes.

MR. STEIN: Are there any other questions?

MR. PURDY: Mr. Stein.

MR. STEIN: Yes.

MR. PURDY: Dr. Carson, when you speak of onland disposal, are you also including a closed cycle from the standpoint of the water, or what would happen to the liquid overflow now in your concept here?

DR. CARSON: The principal difficulty, it seems to me, in this is the fine fraction which gets into the lake, which as I understand is about 4,000 tons a day.

Now, then, it is my understanding that the other

14 or so taconite plants in the region recycle their water. I don't imagine, however, that they take out all of the fines in that process and I don't know if Reserve could do this or not. But I think they could recycle some of their water, and it may very well be possible to take some of the fines out of it. I don't know.

MR. PURDY: Well, what I was wondering about is that you seem to be real concerned about the type of flocculents that might be used. In our experience in Michigan we have onland disposal, but we have overflow now of the clarified water back to surface water, and flocculents have to be used even on this type of onland disposal to take the solids out and the fines. So that simply having onland disposal does not mean that you are not going to have to use flocculents, and that the flocculents in themselves will be soluble, and so will be carried into the receiving body of water.

DR. CARSON: That is perfectly true, but it doesn't have to be Lake Superior.

MR. STEIN: Wait a moment.

MR. PURDY: Well, would you transport then this over into some other basin?

DR. CARSON: You might have to take the fine fractions and the liquid and pump those over the hill. I don't know.

MR. PURDY: Now -- well, again --

DR. CARSON: That doesn't mean all of it. That is only a small fraction.

MR. PURDY: Again, at the national level recently there is the requirement of an environmental impact statement where you have to include consideration of all environmental aspects on Federal projects, and we in Michigan -- the Governor is going to expand this to State projects. And it seems to me that if these flocculents have an environmental impact upon the quality of Lake Superior that you also have to consider the environmental impact of those flocculents in their final resting spot, and that this conference has a responsibility to make sure that we do this so that it has the least environmental impact and that we don't trade one problem for another, just move it to a different spot.

DR. CARSON: The object here though is concern for Lake Superior, isn't it?

MR. PURDY: I have a concern for all surface waters of this Nation.

MR. STEIN: Right.

Let's pursue this, because I think we have a question here. I hope we can say this, and I am asking all of you to work with us on this because this is one of our most difficult problems. That is the transporting and treatment of wastes.

A lot of these people at least come from around Lake Michigan, and if you followed the Lake Michigan diversion case you know where we stand. Likewise, the problem on the Colorado River or the Columbia River is getting water from one place to the other.

Now, let us suppose we agree, for a point of view, because I think we all go the same way. Let's take this on the flocculents.

When we are dealing with flocculents, most big municipal water systems, or quite a few, use a flocculent to clean their water, and those waters have been ingested for years and there is a certain solubility there and contamination. Presumably our Public Health people have certified these municipal waters as safe and potable water supplies that we are now drinking, not alone going into the lake.

You get big city after big city using the flocculent in its water but --

DR. CARSON: We are drinking a lot of stuff we hadn't ought to be drinking. I agree with that.

MR. STEIN: But I am just putting this as the first step.

For example, the water in Washington, D.C. or Cincinnati, or -- to name a few -- Omaha and St. Louis -- that water has been treated with a flocculent before you get it out of the tap, and the people in all those cities have been drinking it.

But here is the point: Let us suppose we have a problem of solids in raw water. We have to use presumably some kind of an agent to get the solids out. We may be able to strip them first -- the big pieces -- but if we are talking about the fines, and that is what we are talking about, we are going to have to use a flocculent. If we don't use the flocculent we are not going to get that all out. Here we are talking about putting wastes behind a dike. This is fine to remove settleable solids. But the real fines go out with the wastewater and into the lake where they remain in suspension and are recirculated. Flocculents are necessary to remove these fine suspended solids.

Now, if we keep the solids behind that dike, the water has to go somewhere. The water --

DR. CARSON: Well --

MR. STEIN: -- let me finish just the problem. The water goes somewhere. The water goes into several places. Either you keep it in the same drainage basin or you pump it out of that drainage basin.

Now, I think what Mr. Purdy has pointed out is that whenever we have a pollution situation particularly or even a question of just the quantity of water rather than the quality, when we take the water out of a particular drainage basin and put it outside that drainage basin you run into the most horrible problems.

As was mentioned this morning, we even had that in Lake Tahoe where we got it out of the drainage basin, and there were all kinds of problems once you got it out.

Now, if what you are asking is if we are taking the water for the process from Lake Superior -- and we want to keep the company in business -- and we are talking about treating it in a way where you think it is not of the kind of quality to be put back into Lake Superior -- even if we can drink it -- if the proposal is to put that water somewhere else, it seems to me that we have an environmental impact.

DR. CARSON: I don't think that is necessarily true.

MR. STEIN: But the point is if we can't treat it good enough so that whatever we take off when we take out the impurities it can go back into Lake Superior, then I think we may have at the least an environmental impact.

What I am suggesting to you is that whatever the spectrum of this is, wherever we put it, we are still faced with the same problem. Now, if you want to use some specific examples, 1) you may be in better shape than you believe if you put this into Lax Lake, 2) you may be in better shape if you put it along the shore behind the dike, 3) the company may believe it is in better shape by putting it in this Great Trough and recirculating it. But, in any event, we are going to have to have a residue of water. When we get through, we are going to have to put it somewhere.

DR. CARSON: That may not be true.

MR. STEIN: What are you going to do with it?

DR. CARSON: I don't know for sure but I would rather -- if it is necessary in the Reserve process to have water as clean as it comes out of the lake originally -- perhaps it doesn't have to be that clean -- maybe if they recycle most of the fines out of it, the few that remain may not hurt anything.

MR. STEIN: Sir, this is what I was getting at with Grant Merritt and yourself. If this is what you are saying, this is precisely what I say. Let's not prejudge it. If we have this problem and this is the problem, I would look at it that ultimate disposal --

DR. CARSON: That is still disposal, isn't it?

MR. STEIN: It may or it may not be.

The ultimate disposal of the water we have to drain out of the solids we keep somewhere that is confined, we are going to have to put back in a watercourse.

Now, you are saying if we can recycle enough or get a few grains in this, that might not do any harm. That may be the approach we should look at this if this is our objective. But I would not be --

DR. CARSON: That is still land disposal.

MR. STEIN: Until the evidence is in, I don't think we should limit ourselves conceptually as to how we are going to do this.

Once we are agreed on what you just said here -- and this is what I agree is the question -- we are going to suck as many of these solids out and keep them in a confined place and we are going to have an amount of water which we may be able to recycle, hopefully. Maybe we can. But if we can't, we are going to have to bleed it off and put it somewhere else.

DR. CARSON: I hope that we don't have to do that.

MR. STEIN: You are going to have to do some of it.

Now Mr. Purdy says if you get to the question of transporting this to another river basin, you may have a problem. The question is how are we going to handle this? Therefore, what I would suggest to you and the rest is we leave ourselves wide open for consideration here in how we are going to handle it and examine all of the proposals.

DR. CARSON: As I say, we are certainly willing to listen, but you know our position. Thank you.

MR. STEIN: Thank you.

Mr. Badalich.

MR. BADALICH: Mr. Chairman, I would next like to call upon the League of Women Voters, and I have an indication here from Mrs. Mary Brascugli that you will make the appearance. Is anyone here from the League of Women Voters?

If not, I will call on Save Lake Superior Association. I believe there is a statement to be made by Mr. Robert Bergson -- Herbert, I am sorry -- Herbert Bergson.

STATEMENT OF HERBERT BERGSON, PRESIDENT,
SAVE LAKE SUPERIOR ASSOCIATION,
DULUTH, MINNESOTA

H. Bergson

MR. BERGSON: Mr. Stein, conferees, ladies and gentlemen. My name is Herbert Bergson. I am President of the Save Lake Superior Association. Our organization has been in existence almost 2 years, a bit longer than your First Session in Duluth in 1969. Our organization has felt it important to make statements at each session along with other concerned citizens' groups. Our concern for Lake Superior is even more now than it was when we first organized, and I wanted to let everyone know that we are still here and we will continue to be here until Reserve Mining Company stops dumping its 67,000 tons of tailings into the lake each day, and we will be here to fight any other kind of polluting.

The Save Lake Superior Association has been praised by many and scorned by few. We have been accused of being anti-industry and trying to shut down the plant at Silver Bay. Let me repeat what I have said many times before: We want Reserve Mining Company to exist to provide jobs to bring more economic benefits to the people of Minnesota, but we will not allow this corporate giant to continue to pollute, when this company with its vast knowledge and resources can have complete onshore disposal within a reasonable time. Our organization does not advocate shutting down the Reserve plant today, but strongly suggests and must insist on construction of an onland disposal plant as soon as possible.

Reserve Mining Company, I call upon you to stand up to the challenge and accept the facts. Do not continue to spend thousands of dollars in defense of your pollution but follow the order of the conferees and spend the money to begin an onland disposal plant. We will be the first to praise you when this is done. We will accept no compromise. In other words, we will not accept a disposal plan which uses a pipe to the bottom of the lake or any other method which uses the lake as a tailings basin.

We endorse wholeheartedly Governor Wendell Anderson's first official act in office when he formally joined this conference. We have known of his concern for sometime and his promise to do something when elected. It is said politicians forget their campaign promises after election day. Governor Anderson did not forget his promise and future generations will thank him for his action. The statements of Governor Anderson and Wisconsin Governor Patrick Lucey today show that neighbors can work together for the betterment of all. There need be no barrier between any State nor should there be a barrier between industry and the people.

In closing, I would like to give thanks for the aid of another man, a man who has served his country and the world in public service for most of his adult life, a man who led the fight against pollution when most people didn't know what pollution meant, a man who now heads the powerful Public Works Committee, and can guide the Corps of Engineers and ask for the revocation of the permit granted to the Reserve Mining Company to use Lake Superior as a basin for its tailings. Representative John Blatnik, I publicly want to thank you for joining with the distinguished men who have already done this: Governor Wendell Anderson, Governor Patrick Lucey, Senator Walter Mondale, and Senator Hubert Humphrey, along with the Wisconsin Senators. Mr. Blatnik, you are the only one left. Join with us. Give us your help. Do it now.

Thank you. (Applause)

MR. STEIN: Thank you very much.

Are there any comments or questions?

Let me make a comment after this. Let me try it this way. It seems to me -- and I have been here through all these conferences -- that there may be methods of land disposal of taconite waste tailings which may create and continue to create a continued pollution condition of the lake.

The question here is not, it seems to me -- and

H. Bergson

I ask you to look at this with me -- not where you put the tailings, but what you keep out of the lake. You can put the tailings on a land disposal and have a system of drainage where you have polluted water courses. We have this in mines all over the country. We have had this in mercury all over this country. We had this in feed lots, and I ask you to remember this. The question here is not where you are putting the material necessarily -- although that is an important point -- but the question is what we are keeping out of the lake. And please don't let this conceptualism really get you off, because I can design you methods of land disposal which will guarantee pollution.

Now, I have some other letters and postcards I would like to put in the record as if read without objection: Dorothy Lindquist of Escanaba; Mary Andeen of Chassell; Nancy Scofield, Houghton -- she wrote two identical letters; Linda Warren of Houghton; Mrs. George R. Mettson of Houghton; and Mrs. Douglas A. Stuart, President of the League of Women Voters of Copper Country.

(The above-mentioned communications follow as if read.)

"The Honorable William D. Ruckelshaus, Administrator for Environmental Protection

"Dear Sir:

Communications

"I want to protest the dumping of taconite tailings into Lake Superior by the Reserve Mining Company. This is a disgraceful practice, which demonstrates blind disregard for the future of our natural resources and supply of pure water for posterity.

"Very truly yours, Dorothy Lindquist"

"Conferees, Lake Superior Enforcement Conference

"Dear Sirs:

"I was so pleased to hear of the reconvening of the conference, and I certainly hope it will be productive. Each day counts as Reserve Mining Company dumps 60,000 tons of taconite tailings each day. This dumping must be stopped completely and at once.

"Yours truly, Mary W. Andeen (Mrs. Gerry B. Andeen)"

"Lake Superior Enforcement Conference

"Gentlemen:

"I urge you, at this session of the conference, to take strong action to stop the pollution of Lake Superior by the Reserve Mining Company. I wrote earlier but that letter may not have been mailed.

"Yours truly, Nancy Scofield (Mrs. S. L.)"

"Mr. W. D. Ruckelshaus

"Dear Mr. Ruckelshaus:

"I urge you, at this session of the conference, to take strong action to stop the pollution of Lake Superior by the Reserve Mining Company. I wrote earlier, but there is a possibility that letter was not mailed.

"Yours truly, Nancy Scofield (Mrs. S. L.)"

"Lake Superior Enforcement Conference

"Dear Sirs:

"I feel Reserve Mining Company must be forced to stop dumping taconite particles (at the rate of 60,000 tons daily) into Lake Superior.

"This should be terminated completely and at once!

"Sincerely, Linda K. Warren"

"Conferees, Lake Superior Enforcement Conference

"Conferees:

"It has come to my attention that a conference is called for January 14-15th to determine the acceptability of the Reserve Mining Company's pollution abatement plans. For 13 years Reserve has been dumping 60,000 tons of fine taconite particles into Lake Superior. I feel very strongly that the Reserve Mining Company should stop its dumping of taconite completely and immediately! There are other waste disposal methods being used now by other taconite plants along Lake Superior, and perhaps they are applicable to the Reserve's pollution abatement plans.

"Sincerely, Mrs. George R. Mettson"

Communications

"Conferees, Lake Superior Enforcement Conference

"Gentlemen:

"The League of Women Voters of the Copper Country supports strong and immediate action to stop further pollution of Lake Superior by the Reserve Mining Company and others.

"Strong local concern over the continued daily dumping of 60,000 tons of taconite tailings by Reserve was expressed in a 10-day petition drive in August. Copper Country citizens drove into town and stood in lines at banks and stores to sign the petition asking for immediate action to stop further dumping by the Reserve Mining Company. We hope it will be possible for the January conference to take such action.

"Sincerely, Mrs. Douglas A. Stuart (Norma Lee Stuart)"

MR. STEIN: Mr. Badalich.

MR. BADALICH: Thank you, Mr. Chairman.

Next I would like to call upon Steve J. Gadler from St. Paul. Is he here this afternoon? I believe not.

Next is the Duluth Chapter of the Izaak Walton League of America. Is there a representative of this organization here?

MR. OLSEN: Yes.

STATEMENT OF DALE W. OLSEN, DULUTH CHAPTER, IZAAK WALTON LEAGUE OF AMERICA, DULUTH, MINNESOTA

MR. OLSEN: Mr. Chairman, conferees, ladies and gentlemen. My name is Dale Olsen. I represent the Duluth Chapter, Izaak Walton League of America.

Dr. Hedman had been scheduled to be here but was unable to remain for the afternoon session.

We have appeared at each session of the conference and we have a very brief statement which we would like to read at this particular session.

As lay citizens of the Lake Superior Basin, concerned with the present and future quality of this great natural resource, we wish to reiterate the views which we have expressed at each previous session of this conference.

In the broader context we are opposed to present or future degradation of the waters of Lake Superior or any of its tributary waters from municipal, industrial or private discharges of sewage or other types of waste materials. Our concern extends to radioactive discharges, thermal pollution, pesticides and other chemicals, dredged materials and the dumping of shipboard wastes.

D. Olsen

Specifically, we continue to urge that taconite tailings no longer be permitted to be dumped into Lake Superior by Reserve Mining Company at Silver Bay, Minnesota, and that a suitable onland disposal site be developed by th company which has been referred to as a "good Corporate Citizen."

Citizens of this Nation, including many fine young persons, are growing restive and become disillusioned with corporate actions which they feel may ultimately affect the very survival of a livable environment. A positive corporate response, as opposed to a continuing reluctance to change, could do much, we feel, to dispel the uneasiness which affects our society.

Perhaps short-run profits could be reduced a bit and perhaps dividend checks to Republic and Armco Steel Corporation stockholders shaved slightly in order to save a great water resource for all future generations. There seems little reason to believe that employees of Reserve Mining Company would be relieved of their employment because of adoption of an alternative onland tailings disposal system. Perhaps such a system might even increase available jobs. As we stated on May 14, 1969, at the conference session: "It is possible to have jobs and also to husband our resources for generations yet unborn."

Lake Superior is unique in its water quality

D. Olsen

Standards in this lake should be maintained at the highest quality to ensure nondegradation. From our reading of the conference proceedings to date, a continued dumping of taconite tailings into the lake does not seem at all compatible with the maintenance of a high quality water resource.

We also have a concern in relation to the regional sewage proposal which came up a little earlier in the session this morning.

A proposal has recently been made to provide for regional sewage treatment in the St. Louis River Basin. We wish to record our support for the regional concept. We do, however, wish to emphasize the contingency of this support as follows:

1. Water quality standards in the basin should be applied to the body of water which receives the final effluent as well as to the effluent prior to discharge from the plant. This would preclude a heavy reliance upon dilution in the receiving watercourse as the ultimate solution for disposal of potentially harmful residues in the discharged effluent.

2. Each contributor to the system should have monitoring facilities on his premises which can be checked periodically to determine the nature and content of the effluent which he discharges into the system. Such

monitoring may indicate that some industrial wastes would necessitate pretreatment before disposal into the regional system.

3. Our concern is particularly great that the standards finally set consider all possible substances which may be contained in the effluent. We are particularly concerned that mercury, lead, and other metallic residues be rigidly controlled.

We wish to strongly commend the action of Minnesota Governor Wendell Anderson through which the State of Minnesota has formally joined this conference. We feel that intrastate and interstate powers may now be more forcefully brought to bear on pollution in the Lake Superior basin.

I would revise the next sentence to recognize that Governors Lucey and Milliken have also formally joined, and I must refer to Mr. Purdy and Mr. Frangos who have been here lo these many sessions -- we recognize that Michigan and Wisconsin have been well represented. But the formal joining is what we are plotting at this point -- whatever that might mean.

And finally we wish to thank the conferees for providing us with an opportunity to appear. We commend your efforts in our behalf for the protection of our environment.

Thank you.

MR. STEIN: Thank you.

Any comments or questions?

MR. PURDY: I have one question.

MR. STEIN: Yes.

MR. PURDY: Mr. Olsen, you mentioned a suitable onland disposal site, and I am wondering if you can say -- give the conferees some guidance as to what your definition of a suitable onland disposal site might be.

MR. OLSEN: How long do we have?

MR. STEIN: Just give us a name.

MR. OLSEN: Just a few general points.

I think the point, Mr. Chairman, that you made awhile back -- in other words, we have to be concerned about degradation in areas other than Lake Superior. But then I would raise the question: How about this concern in the areas where the stripping is going on, to bare the rock or the ore. We have the same problems there of the water runoff, and so on. So, in a sense, I think it is, as some of the other people have pointed out, a matter of considering the value of the resource and perhaps being willing to accept a little bit more by way of degradation in one area than another. And I guess I would have to say the uniqueness of the lake makes it such that I would have to be willing to accept some degradation on land.

MR. PURDY: Well, I have heard a great deal of discussion about the so-called Lax Lake Area, and it is my understanding this area contains, at the present time, a natural lake. If it could be shown that the tailings could be placed in a restricted area in the lake -- and I fully support Governor Lucey's comment this morning that there should be no repetition of this technique, that we are dealing with an existing situation -- and if it could be shown that you could place those in a restricted portion in the lake with no ecological damage other than filling that particular section of the lake, do you feel that, say, using the Lax Lake area as a tailings basin would be a suitable alternate?

MR. OLSEN: I would rather not commit myself specifically to Lax Lake, but I think that some suitable location where these other threats -- the ones discussed with Dr. Carson and others -- might be controlled, we would be willing to accept this as opposed to continued dumping in Lake Superior if that is what you are getting at.

We would prefer the onland even if it means filling a lake, whether it be Lax or some other inland lake. This is a State with -- how many thousand do we have? And I love all of them. But I think that Lake Superior as compared to another individual one would leave little choice and I would have to opt for Lake Superior.

MR. PURDY: I place some constraint on my question there of where, if it could be conclusively shown that no ecological damage would occur to Lake Superior other than filling a restricted portion of the lake --

MR. OLSEN: Of which lake?

MR. PURDY: Lake Superior.

Would you then opt for onland disposal where you might use Lax Lake area for a tailings basin? I am trying to get the magnitude here of your concern about a suitable onland disposal site.

MR. OLSEN: Well, as I thought I spelled out, we would opt for the onland disposal site in Lax Lake or another lake as opposed to any continued dumping in Lake Superior.

MR. STEIN: Even though it didn't do any ecological damage in Lake Superior except to fill?

MR. OLSEN: Only if I could be definitely assured that this would not be the case, and this is what concerns me, because when the Reserve permit was granted in 1947, we were assured that, you know, we wouldn't face these problems today.

MR. STEIN: This is the assumption he made in the question.

Now, let me again give -- and I hope the rest of you are with us on this thing -- let's try to work this out.

I know every time we come out here, we find some new theory that the local people have that they are all caroming to, and now this seems to be onland disposal, and certainly I am not objecting to it.

But the problem that I have had in the water field -- and I think Mr. Purdy has worked with his former predecessor, and his former predecessor, who spent their careers litigating that Chicago diversion case.

Years ago, Abel Wolman*, who was one of the big names in the engineering profession, came up with a solution to clean up the Potomac situation by building a pipeline to Chesapeake Bay and dumping it into Chesapeake Bay.

We were pushed to extremes in Lake Tahoe, which is a relatively small program like this, and I was in on that and I was the chairman of the conference on that the same way, and we said no effluent, treated or untreated, could go in the lake, and we had to go over the Divide and put it somewhere else. And the people down in Sparks near the Tahoe River and the Truckee River had a fit no matter how well we treated it.

I have also been in a situation for years and

---

*Abel Wolman & Associates
Baltimore, Maryland

spent a career on this on the Colorado River with Utah, Arizona and California, and some of you people might know -- may or may not know -- that 10 million people in southern California use the Colorado River as a drinking water supply, they are piping through the Divide.

However, in order to solve these transbasin operations, it took us decades of litigation. The problem, sir, that I have and I think you all share this with us is that I don't think we have that time to fool around with Lake Superior. We must come up with an answer.

Now, the problem that you give us is not a very easy one. You have to recognize this. As far as I can see, on this onland disposal it means when we put it on the land we have to have some transport water. Let me give it to you, because maybe some people have another notion or very wrong notions or either we put that stuff -- and I don't know how we do this in the wintertime -- in carts and take it back to Babbitt and dump it in an open pit. The difficulty is -- and I have been dealing with the mining business for maybe a quarter of a century -- no one has indicated to me yet how you run an open pit mine, work it and keep filling it at the same time. I don't know that there is an answer to that. That may be like trisecting a triangle.

Maybe you have some other mines up there that you can fill in and I don't know how much -- maybe around a place perhaps like Lax Lake. Then maybe you have some land north of the plant where you can build a dike, and we and the Corps of Engineers know **how** to build dikes with fill land, or else you have that gorge in front of the plant.

Now, it is obvious to me we have to preserve Lake Superior. This is our first step at all costs. Our first step in almost all solutions is that we are either going to have to have a residue of water we are going to have to drain from the solids stuff we are going to have to put back in the lake, or else transport it to another watershed.

Whatever your particular judgment in putting this into another watershed may be, I visualize that we have tremendous legal problems. No one wants to be on the receiving end. The guys in Chesapeake Bay didn't want to be on the receiving end of Washington's pollution, no matter how good you might think it is.

I remember years ago I was on an airplane with Tommy Corcoran, who was the lawyer for Roosevelt and the New Deal. Tommy Corcoran said, "When are you guys going to get off of your dead ends and take the Fraser and Columbia River and divert it and get that water down into Oklahoma and Texas?"

He thought of it in 1932, and we haven't been able to do it yet. This is the most difficult kind of thing.

In Chicago, when we had the diversion case, we didn't send the wastes from Chicago into Lake Michigan, but we put it in a Sanitary Ship Canal and shipped it out to the DesPlaines River, to the Peoria, to the Illinois River, and into the Mississippi. That took 40 years of litigation.

What I am saying to you is that we have to come up with a solution. I think if we are going to preserve Lake Superior it is fundamental we are going to have to fly. I would not like to tie into a prolonged case of litigation so that if we get into that, Reserve Mining -- and I hate to mention them; I hope they will pardon me in prejudging it -- it is going to keep doing the same thing it is doing right now without any change until the suit is settled. We have had enough of this.

What I am trying to do, sir, is come up with the solution that we must come up with and put it into operation I would hope within 2 years possibly to save this lake and keep this out. To save this lake, it seems to me that the key point -- and I ask you to keep your eye on this -- is not so much of where we put the solid material, because we know how to confine that, but what the characteristics of the water is going to be that we are going to take off. Whether the fines are going to be in that, whether we are going to have to, whatever we do, dispose of that in the lake, and whether that is going to flow down off the lake.

Now, sir, let's suppose we opt for Lax Lake, or let's suppose we go up above there and build a dike, or let's suppose we have the gorge. If we are not worried about the solid material, we are kidding ourselves, unless we recognize that the water flowing off that is going to get into that lake and spread around, and it is going to be deleterious to the lake and we have to keep that innocuous. And I submit to you, sir, that this latest theory here now -- this onland disposal -- that is great and is one alternative and may be the way we solve it.

But we are looking at the wrong end of the telescope. The thing we have to keep our eye on is not where we put the material but what is going to have to happen to the stuff that runs off from that material and gets into the lake. That is what we have to guard against.

This may be a wretch to the people here, but I ask you to really, really start thinking about that, because other than that we are not going to preserve Lake Superior and no one wants to do that more than I do really.

MR. OLSEN: I think my concern would be parallel with yours in many respects, including that of seeking to assure -- assuming some one of many possible onland sites -- including hauling it back up to the strip area.

MR. STEIN: Right.

MR. OLSEN: And so on.

But I guess what I am concerned about is assurance either in that case -- if that is what it is going to be -- or assurance if what Reserve is purportedly -- you hadn't heard about it yet or others hadn't heard about it -- purportedly something to do with making larger segments and filtering it out --

MR. STEIN: Let me ask you --

MR. OLSEN: Can I finish?

MR. STEIN: Yes. I am sorry.

MR. OLSEN: What I am concerned about is: I can -- assuming I had the money to do this -- I could retain consultants who would come up with, let's say, two perfectly respectable, responsible scientists of whatever nature, who would come up with diametrically opposed views as to the assurances in these systems, and in the last analysis you are going to have to make the decisions.

MR. STEIN: But, sir, let me tell you this. Admittedly I am pushing this point, and it is always dangerous on the record, but I think we are all sophisticated enough to understand it.

I can visualize an onland disposal where you would let the stuff run off, when theoretically that is possible to do more damage on the lake than perhaps putting material in a gorge in the lake unless you had a dike or a barrier and you picked up that water and recirculated and purified it before it got out.

So I am saying, while it is an important point where you put the stuff, and you may have to have more assurances if you are going to put it in water, the key point is that we have to protect or guard against the stuff that runs into the lake. That is what I am asking you to keep in mind.

If I may switch and because you pushed this, I have one more point on your prerequisites of what you want to do in that plan.

I know we have a sophisticated audience. Let me try to give you part of our problem here. You said if we could keep out the pollutants including -- you gave the notion -- mercury and lead. Well, sir, we are going to keep that mercury and lead out if we approve the plan. But the trouble is, if we started up a year ago --

MR. OLSEN: You wouldn't be aware of the problem.

MR. STEIN: -- you wouldn't have mentioned mercury and lead and I wouldn't have known about mercury and lead.

The point is that I want to make clear to you the things that vex us like mercury are pollutants and the problems we know nothing about. When we know something about it we can do something about it.

When you ask us to keep out all, that is a pretty tall order, and if any one of us were smart enough 3 years ago to talk about mercury, I didn't hear them.

All right.

MR. OLSEN: I think the point I particularly wanted to emphasize in this session on the regional plan was that if a major commitment was made, and if it is, albeit seemingly impossible to set up an interstate compact between Wisconsin and Minnesota in the State Legislatures to set up a single district and agree to build a single plant, what our concerns are -- and I hope you bear in mind we are speaking essentially as a layman in all of these points and have to defer to some other people in terms of their expertise, and then make our judgments on what --

MR. STEIN: Let me say you are not such a layman. You know, as far as you are concerned, we are just as much laymen on this. I got the mercury program and I got up to the Congress. They asked me why I didn't abate this beforehand. Then I told them we had these great reductions and we got all these plants to roll back, and I thought we got the best results. They said why were you sitting around? Do you realize that in 1966, in the Japanese Medical Journal and a Sweden scientific journal there was an article on mercury?

Of course, what I didn't say is when you talk about laymen, I am supposed to be an expert. I really don't read the Japanese and Swedish journals. I am just as much a layman as you are.

MR. OLSEN: I am beginning to wonder, Mr. Chairman.

MR. STEIN: I mean unless someone calls this to our attention, we are in the same spot as you are.

MR. OLSEN: The point I was beginning to make there was that our specific three points here on the regional system , it is our hopes that if it is backed all of the way along that sufficient safeguards will be built into the engineering, based upon all known information or all information available at the point. Obviously we are not omniscient; you are not omniscient. We appreciate that, but the essence of our argument is if we are going to put these millions of dollars into this and we feel it would be an excellent sort of facility or could be, we aren't absolutely certain that we can protect against those real threats -- albeit plans -- that we are a little bit wary of. And that is our major concern.

MR. STEIN: Are there any other comments or questions?

If not, Mr. Badalich, before you go on, we have another letter from our penpal, Viola Brown and Robert T. Brown, Ph.D., Professor of Ecology of Michigan Technological University. Without objection, I would like to put this in the record at this point as if read.

(The above-mentioned letter follows as if read.)

"Lake Superior Enforcement Conference

"Gentlemen:

"One of the best pieces of news concerning the problems of improving our environment is the reconvening of the Lake Superior Enforcement Conference to determine the acceptability of Reserve Mining Company's abatement plans. Our hope is that the conference will deal sternly with the company as it continues to pollute the only clean body of water among the Great Lakes. We feel, as you do, that Lake Superior must be protected for coming generations. An ounce of prevention, as the old adage goes, is certainly more easily attained than solution to the problems that come with attempting the cure. What can be done, for instance, with Lake Erie?

"As an ecologist and a biologist, I feel that preservation of quality in Lake Superior transcends any mundane activity as being carried out by the Reserve Mining Company. The value of this lake as a water resource alone far exceeds any value it may have as a sewer.

"Sincerely yours, Viola J. Brown (Mrs. Robert T.), Robert T. Brown, Ph.D., Professor of Ecology, Michigan Technological University"

MR. STEIN: Mr. Badalich.

MR. BADALICH: Mr. Chairman, I want to thank Mr. Olsen and also want to thank you for your supporting statement.

Next I would like to call upon Mr. Robert Roningen, who is representing -- attorney representing the towns of Lakewood and Duluth.

STATEMENT OF ROBERT RONINGEN, ATTORNEY, TOWNSHIP OF LAKEWOOD, TOWNSHIP OF DULUTH, DULUTH, MINNESOTA

MR. RONINGEN: Ladies and gentlemen, my name is Robert Roningen. I am an attorney in private practice in Duluth, and am the attorney for the Township of Lakewood and Township of Duluth which are located in St. Louis County, Minnesota.

These are the two townships that are immediately north and east of the city of Duluth and extend to the border of the county of St. Louis which is located at approximately Knife River.

The St. Louis County Helath Department, under the direction of the county health engineer, Kenneth VanEss, made, in 1968, an environmental survey along this area and other areas in Duluth, and this report is known as the VanEss Report. I am hereby offering to the conferees a true copy of this report as an exhibit, and I have handed it to the secretary already.

(The above-mentioned report follows in its entirety.)

Exhibit
Town of Lakewood & Town of Duluth

Environmental Survey - 1968
St. Louis County, Minnesota

Prepared by
Kenneth Van Ess
St. Louis County Health Department
Duluth, Minnesota
April 1969

Environmental Survey 1968
St. Louis County, Minnesota

Introduction:

In 1963 the St. Louis County Board of County Commissioners adopted the first part of the St. Louis County Public Health Code which regulates the installation of individual sewage disposal systems. The Code requires anyone installing an individual sewage disposal system to obtain a permit from the St. Louis County Health Department and the system must be inspected and approved by the Health Department before it can be used. The Code also requires all sewage to be disposed of in a sanitary manner without creating any nuisance conditions.

The intent of the Public Health Code was to correct the many sewage disposal problems throughout the County and to prevent the creation of such problems in the future. Although a great deal of progress had been made it was becoming quite evident that there were still too many sewage problems that needed to be corrected. It also seemed that in spite of the controls there were still some problems being created. However, the magnitude of the problem was not known and little was known regarding the pollution of lakes by septic tank systems. Therefore, a special survey was conducted during the summer of 1968 by the St. Louis County Health Department. The survey was made possible by a public health service grant from the Minnesota Department of Health.

Survey Procedure:

Areas where sewage problems had been experienced were selected to be surveyed to determine the extent of the problem and what factors contributed to the problem. Other areas where little or no problems were experienced were also selected to be surveyed as a basis of comparison.

Four summer employees conducted a house to house survey in each of the selected areas utilizing the form shown in Figure 1. An attempt was made to inspect every one of the houses in the areas. If no one was home at the time of the survey no inspection was made but a number of attempts were made to recontact the occupants of the home. In this way a very high percentage of the homes were inspected. A survey form was completed for each home contacted. The interviewer would first introduce himself and explain the reason for the survey. He would then ask the occupant a number of questions regarding his sewage disposal system and the occupants preference for a community sewer vs. their own individual sewage disposal system. Every attempt was made to be impartial and not influence the answer of the person interviewed. With the permission of the occupant the interviewer then made a brief inspection of the property to determine if there was some type of problem with the sewage disposal system. After completing the inspection the interviewer would indicate on the form whether there was a sewage problem and if there was a problem he would indicate the type of evidence that was found.

Sampling Procedure:

Throughout the summer 335 water samples were collected from 81 lakes and streams throughout the County. The samples were taken to determine if there was any amount of pollution occurring in any of these lakes. With a few exceptions, samples were collected each Monday in order to give the laboratory sufficient time to conduct all of the tests during the regular working days. An attempt was made to take the samples from representative points in each lake.

If samples taken from a lake showed there was very little if any pollution, no further samples were collected from that lake. However, if the results showed a moderate or high amount of pollution further samples were collected to further substantiate the extent of the pollution. Because of the special interest in the probable pollution of Pike Lake, 130 samples were collected from this lake throughout the summer. In this way it was hoped that more could be learned about the relationship of the failing septic tank systems and the lake pollution and what effect temperature and rainfall might have upon the level of pollution.

The water samples were collected in sterile plastic bags and were taken at 6 to 12 inches below the surface of the water. The temperature of the water was measured and recorded at each sampling site. The samples were then transported to the Health Department Laboratory in an ice chest. The laboratory tested each sample for total coliform count, fecal coliform count, enterococci (fecal streptococci) count, nitrate nitrogen concentration, and total soluble phosphorous concentration. The samples taken the first four weeks were tested for detergent but because none was found this test was discontinued.

Survey Results:

The survey encompassed 45 areas throughout the county. Table 1 lists the areas surveyed and the per cent of homes contacted. Although it was practically impossible to contact every home in each area a very high percentage of homes were contacted in the areas with a high percentage of problems. A special effort was made in the Pike Lake area to obtain a high percentage of contacts.

The inspection findings in Table 2 indicate a wide range of percentage of sewage problems. Thirteen areas totaling 331 surveyed homes had no sewage problems. There were fifteen areas containing 730 surveyed homes that had 40% or more of the homes with sewage problems. Some of the interview data is compared with the inspection findings in Table 3.

A comparison was made between the soil and ground conditions and the percentage of sewage problems in Table 4. For the 22 areas listed the soil and ground conditions were given a broad classification. The conditions were classified "good" if the soil was generally dry and coarse sand and/or gravel. The area was designated "fair" if clay and/or silt was found to some extent in the soil and parts of the area had wet portions. Where most of the soil was clay or most of the ground was very wet the area was classified "poor". The areas included in Table 4 are quite representative of the wide range of soil types found in St. Louis County.

Sampling Results:

Table 5 shows the results of the laboratory tests made on the 335 water samples. No chemical tests were run on some of the early samples because of a delay in getting the test procedures established. The bacteriological results showed a wide variation in values but the chemical concentrations did not vary greatly.

Discussion of Survey Results:

With a few exceptions the results of the survey were about what was anticipated. The sewage problems were found in the expected areas and somewhat to the extent found. It could be expected that more sewage problems would be found in the sewage systems that have been in use for a greater length of time (Table 3). It has always been known that more sewage problems existed in areas with "poor" soil and ground conditions. A superficial examination of Table 3 would indicate that a greater percentage of sewage problems are found in the systems where the septic tanks are cleaned most frequently. However, it must be remembered that most people will not clean their septic tank until and unless they experience a problem. This is why in so many of the areas where little or no problems are found most of the people "never" clean their septic tanks. This, of course, would influence the results of the survey. A close examination of the results for the areas with high percentage of sewage problems shows about the same percentage of problems regardless of the frequency the septic tank is cleaned. A study of the remaining interview data gave no indication of the cause of the sewage problems.

Although the results shown in Table 4 were generally anticipated it was rather amazing that the soil and ground conditions related so closely to the degree of sewage problems. It was also quite shocking that so many areas had close to 50% of the homes experiencing some type of sewage problem that was revealed by the survey. It is no wonder that a distinct sewage odor can be detected when driving through some of the areas.

No attempt was made to find out which systems had been inspected by the health department when they were originally constructed. It has been shown in previous studies that a sewage system would function properly for a greater length of time if it was constructed according to accepted standards. The survey data from the North Shore area would at first seem to contradict this fact. About half of this area is within the City of Duluth and the Health Department has inspected the construction of septic tank systems in this part of the area since 1935. In the remainder of the area outside the city limits the health department did not make such inspections until 1963. Nevertheless the percentage of sewage problems was approximately the same in both parts of the area. However, it must be pointed out that the soil is predominantly clay in this area and by acceptable standards is considered unsuitable for septic tank systems. In spite of this fact septic tanks have been allowed in this area until very recently. This is also true for the other areas with "poor" soil and ground conditions. Acceptable standards include the requirement that the soil be suitable as determined by soil percolation tests. Therefore, there is no reason to believe that proper construction methods won't extend the life of a septic tank system if it is installed in suitable soil.

The survey results have substantiated the fact that the condition of the soil and ground is the main determining factor in the life expectancy of a septic tank system. When the soil is considered unsuitable by acceptable standards many of the septic tank systems can be expected to fail and create sewage problems. In the case of this survey about 50% of the systems were creating problems in areas of unsuitable soil conditions. It would seem logical that if 50% of the homes were found to have a sewage problem at the time of the survey most of the rest of the homes have or will have sewage problems as well. These conditions will continue to exist in spite of efforts to repair or rebuild the individual sewage systems. The people of these areas are generally aware of the futility of trying to repair their own sewage systems. For this reason over half of the people expressed an interest in obtaining public sewer in their area if it could be provided at a reasonable cost.

In the North Shore area attempts were made to overcome the poor soil conditions by installing extra large drain fields (1980 sq. feet of absorption area) but this has made no measurable improvement. Sewage systems in these areas have been known to fail in less than a year. With half of the homes experiencing sewage problems these areas definitely have a dangerous public health problem. Newer types of home sewage treatment systems are now being tried but it is already obvious there are some limitations and the initial cost is about twice the cost of an ordinary septic tank system.

Discussion of Sampling Results:

The results of the sampling program did not reveal very much information about the water quality of the various small lakes sampled. This is primarily due to the lack of a meaningful standard to compare with the results. Most standards now used set a maximum total coliform count of 1000/100 ml. of sample. Other standards set this maximum at 2400/100 ml. Total coliform counts above these values are supposed to indicate that the body of water is polluted and unsafe for swimming purposes. However, quite a number of samples collected from lakes which are known to be free of pollution had total coliform counts above these standards. In addition, there are no generally accepted standards for fecal coliform counts, enterococci counts, and chemical concentrations.

The coliform group of bacteria as enumerated in the total coliform count are found in great numbers in fecal material from warm-blooded animals, in soils and on some plants. It is no surprise then that these organisms are found in our lakes and streams. It has generally been shown that in waters that are known to be polluted with sewage coliform bacteria will be found in large quantities. Attempts to set a meaningful standard have been unsuccessful and it has been concluded that a physical inspection of the lake or stream must be performed in addition to the sampling in order to establish whether the water is polluted.

The fecal coliform group of bacteria comes only from the intestinal tract of warm-blooded animals. This organism provides a somewhat better indicator of sewage pollution but it does not differentiate between the human and animal sewage pollution. Only recent attempts have been made to establish standards for this organism. The National Technical Advisory Committee on Water Quality Criteria recommended in their report in 1968 that "the fecal coliform content of primary contact recreation waters shall not exceed a log mean of 200/100 ml., nor shall more than 10 per cent of total samples during any 30-day period exceed 400/100 ml." However, in the same report the committee stated:

> "The establishment of special criteria (e.g. public health requirements) necessary for the protection of the primary contact recreation user has been a major problem for the Subcommittee. Moreover, in recommending specific water quality for this purpose the Subcommittee is faced with a sharp dilemma - that of balancing reasonable safeguards for the public health and physical well-being against possible undue restrictions on the availability of waters for contact recreation. The problem is further complicated by the inadequacy of studies correlating epidemiological data on water-borne diseases with degrees of pollution in recreational waters."

Even though the fecal coliform counts obtained in this survey showed that the lakes complied with the recommended standard it must be noted that a physical inspection (sanitary survey) of the lakes must also be made in order to make any conclusions. Where time allowed, such an inspection was made as part of the environmental survey.

The enterococcus group of bacteria can be found in warm-blooded animal feces, insects and plants. In human feces the fecal coliform bacteria will generally outnumber the enterococci by 4 to 1. However, in non-human feces from other warm-blooded animals the ratio is completely reversed with the enterococci bacteria outnumbering the fecal coliform. This provides a method of differentiating between human and non-human sewage. However, it is not known if this relationship holds true after sewage is diluted in a body of water as a lake or stream.

The results of the environmental survey and water sampling at Pike Lake indicate that this relationship may not be quite the same but would point to the presence of human sewage pollution. Sampling stations 4 and 6 are relatively near the areas where most of the sewage problems were found. These are the only two places where it could be reasonably assured that the water was polluted with human sewage. For these stations the average values for the fecal coliform count and the enterococci count were almost the same. For the other stations and lakes the enterococci count was somewhat greater than the fecal coliform count. The exceptions to this observation are no doubt caused by the small number of samples or the very low counts. A forthcoming report on the Pike Lake study will include further information on this point.

Most of the recent scientific literature has indicated that when the nitrate nitrogen concentration exceeds 1.4 ppm and the phosphorous concentration exceeds 0.1 ppm an accelerated growth of algae and other aquatic vegetation can be expected if climatological and other conditions are favorable. However, not all of the conditions necessary for such accelerated growth are known and it has been found that many lakes exceed these concentrations without excessive growth of weeds or algae. As near as can be determined the lakes sampled in this survey have near normal levels of nitrogen and phosphorous concentrations. Sewage is one source of these nutrient chemicals in addition to natural sources. Therefore, it is quite possible that some of the lakes could have aquatic weed problems if they receive too much sewage pollution.

Many factors including water temperature and rainfall can greatly affect the water quality of lakes and streams. This is why the test results will vary considerably from time to time. Because of this fact very little reliance can be placed on 1 or 2 samples from a lake. It can only serve as an indication as to whether further sampling and investigation may be necessary On the other hand some conclusions can be made when numerous samples are taken over a period of time as was done in the case of Pike Lake.

Even so the sampling results need to be carefully related to survey data and other related information in order to draw meaningful conclusions.

Conclusions:

Based on the results of this study and information from various other sources the following conclusions can be made:

1. In areas where the soil is classified as unsuitable in accordance with accepted standards the construction of new septic tank systems should be prohibited. Public sewers should be installed in these areas as soon as possible.

2. Where septic tank systems can be expected to function satisfactorily a great effort by the health department should be made to obtain corrections of faulty sewage systems. The health department should continue to inspect the construction of new sewage systems in these areas.

3. With the exception of Pike Lake the survey indicated that the lakes tested probably had little or no pollution. Some of the lakes and streams such as Little Fork River need further investigation and sampling to determine if the one or two samples are indicative of the pollution level. In the case of Pike Lake the extensive study gives evidence that the lake is being polluted. This conclusion is primarily based on the results of the survey but the water sampling also gives some support to this conclusion.

Summary:

An environmental survey was conducted by the St. Louis County Health Department during the summer of 1968. A house to house survey was made of 3,104 homes in 45 selected areas to determine the magnitude of failing septic tank systems. In addition, 335 water samples were collected from 81 lakes and streams to determine the extent of pollution caused by failing septic tank systems.

The results of the survey indicated that poor soil conditions were the predominant factor in the failure of septic tank systems. There were fifteen areas containing 730 homes that had 40% or more homes with sewage problems. In the problem areas over half of the people were desirous of obtaining public sewer. In the worst areas there is a real need to prohibit the construction of new septic tank systems.

The extensive survey and water sampling in the Pike Lake area indicated the lake is being polluted by human sewage in at least two areas. The rest of the lakes and streams did not seem to be polluted but several indicated a need for further investigation.

KVE:sle

☐ N.H.________ St. Louis County Health Department

☐ R.D. Environmental Survey

Name________________________________

Address________________________________

Owned ☐ Rented ☐ No. bedrooms____

INTERVIEW DATA

1. S.T. w/sub-drain field ☐
2. S.T. w/seepage bed or pit ☐
3. Cesspool ☐ Seepage pit ☐ Septic tank only ☐
4. Drain line only ☐ Privy ☐
5. No. persons served________
6. Installed by owner ☐ Contractor ☐
7. In use: 1-5 yrs. ☐ 6-10 yrs. ☐ 10+ yrs. ☐
8. Malfunction: Frequent(annually or less) ☐ Occasional ☐ Never ☐
9. Sludge removed each: 1-3 yrs. ☐ 4-6 yrs. ☐ 7+ yrs. ☐ Never ☐
10. Garbage disposal in use: Yes ☐ No ☐
11. Prefer: Community sewer ☐ Individual system ☐ No opinion ☐

INSPECTION DATA

1. ☐ No evidence of problem
2. ☐ Ground is extraordinarily wet and soft, and sewage odor can be detected indicating sewage system is near failure.
3. ☐ Household wastes or sewage effluent is observed on the surface of the ground or in an open depression or container.
4. ☐ Household wastes or sewage effluent is observed polluting a ditch, stream, or body of water.

REMARKS:________________________________

____

____

____

Date________ ________________________________

Interviewer

TABLE 1. SURVEY AREA NUMBERS AND PER CENT OF HOMES SURVEYED

Area No.	Area Surveyed	Total Homes in Areas	Homes Surveyed No.	%
1	Adams Hill, Eveleth	49	28	57.2
2	Bass Lake, 57-16	74	28	37.9
3	Bay View Heights, Duluth	69	56	81.2
4	Benneville, Babbitt	36	20	55.6
5	Birch Pt., Lake Vermillion	141	48	34.1
6	Boundary Avenue, Duluth	34	32	94.1
7	Calvary Road, Rice Lake Township	178	149	83.7
8	Cedar Island Lake, Biwabik Township	30	12	40.0
9	Chandler-Finn Hill, Ely	92	71	77.2
10	Cook, Minnesota	21	11	52.3
11	Corey Acres & Mesaba Addition, Hibbing	42	35	83.4
12	Deferding Pt., Ely Lake	30	11	36.7
13	Donnywood Acres, 60-18	17	12	70.6
14	Dunkee River Platte, Babbitt	34	18	53.0
15	East Chandler Road, Ely	40	24	60.0
16	Elliot Lake, 56-17	30	13	43.4
17	Ely Lake, Fayal Township	180	102	56.7
18	Elynwood, Hibbing	13	11	84.7
19	Esquagama Lake, Biwabik Township	111	58	52.2
20	Everett Pt., Lake Vermillion	28	12	42.9
21	First Avenue & 53rd Street, Hibbing	113	74	65.5
22	Frazer Bay, Lake Vermillion	31	14	45.2
23	Herman Township, Section 25	145	123	84.8
24	Hoodoo Pt., Lake Vermillion	60	16	26.7
25	Industrial Area - W. 41st St., Hibbing	19	15	79.0
26	Kelly Lake, Stuntz Township	17	12	70.7
27	Lake Fourteen, 60-19	103	42	40.7
28	Lake Leander, 60-19	97	42	43.3
29	Leetonia, Stuntz Township	53	35	66.1
30	Little Sturgeon Lake, French Township	105	55	52.4
31	Long Lake, Fayal Township	96	55	57.3
32	Mounted Route, Aurora	28	17	60.7
33	Niagara-Swan Lake Road, Duluth	22	19	86.4
34	North Shore, Duluth	235	198	84.3
35	O'Rourke Road, Hibbing	23	12	52.2
36	Philman Addition, Hibbing	16	12	75.0
37	Pike Lake, Canosia & Grand Lake Townships	256	235	91.8
38	St. Mary's Lake, Fayal Township	64	35	54.7
39	Sand Lake, 60-18	140	68	48.6
40	Side Lake, French Township	59	29	49.2
41	Sparta No. 1, Missabe Mtn. Township	61	44	72.1
42	Sparta No. 2, Missabe Mtn. Township	29	23	79.4
43	Spaulding, Ely	29	16	55.2
44	Spruce Location, Eveleth	15	11	73.4
45	Wakem-up Bay, Lake Vermillion	39	18	46.2
	All Areas	3,104	1,971	63.5

TABLE 2. INSPECTION FINDINGS

Area No.	Homes Surveyed	Types of Sewage Problems: Wet surface & sewage odor	Sewage on ground	Sewage in ditch or stream	Sewage Problems No.	Sewage Problems %	No Sewage Problem No.	No Sewage Problem %
1	28	0	9	2	11	39.3	17	60.7
2	28	0	2	0	2	7.1	26	92.9
3	56	1	15	11	27	48.3	29	51.7
4	20	0	1	2	3	15.0	17	85.0
5	48	0	0	0	0	0	48	100.0
6	32	0	14	5	19	59.4	13	40.6
7	149	2	41	40	83	55.7	66	44.3
8	12	0	0	0	0	0	12	100.0
9	71	0	10	28	38	53.6	33	46.4
10	11	0	5	3	8	72.8	3	27.2
11	35	9	9	3	21	60.0	14	40.0
12	11	0	1	2	3	27.2	8	72.8
13	12	0	0	0	0	0	12	100.0
14	18	0	0	0	0	0	18	100.0
15	24	0	0	6	6	25.0	18	75.0
16	13	0	0	0	0	0	13	100.0
17	102	4	5	2	11	10.8	91	89.2
18	11	1	1	0	2	18.2	9	81.8
19	58	0	2	0	2	3.5	56	96.5
20	12	0	0	0	0	0	12	100.0
21	74	3	14	19	36	48.7	38	51.3
22	14	0	0	0	0	0	14	100.0
23	123	1	21	12	34	27.6	89	72.4
24	16	0	0	0	0	0	16	100.0
25	15	5	1	0	6	40.0	9	60.0
26	12	1	5	0	6	50.0	6	50.0
27	42	0	0	0	0	0	42	100.0
28	42	0	0	0	0	0	42	100.0
29	35	5	1	1	7	20.0	28	80.0
30	55	0	0	0	0	0	55	100.0
31	55	1	1	3	5	9.1	50	90.9
32	17	0	1	2	3	17.7	14	82.3
33	19	0	4	4	8	42.1	11	57.9
34	198	4	36	49	89	45.0	109	55.0
35	12	0	4	3	7	58.3	5	41.7
36	12	2	3	1	6	50.0	6	50.0
37	235	4	23	12	39	16.6	196	83.4
38	35	1	0	0	1	2.9	34	97.1
39	68	1	0	1	2	2.9	66	97.1
40	29	0	0	0	0	0	29	100.0
41	44	0	2	6	8	18.2	36	81.8
42	23	0	5	5	10	43.5	13	56.5
43	16	0	1	5	6	37.5	10	62.5
44	11	0	2	3	5	45.4	6	54.6
45	18	0	0	0	0	0	18	100.0
TOTAL	1,971	45	239	230	514	26.1	1,457	73.9

TABLE 3. Comparison of some Interview Results with Inspection Findings

Area	Sewage	Years in Use				Frequency Septic Tank Cleaned - Years				
No.	Problem	1-5	6-10	10+	Unknown	1-3	4-6	7+	Never	Unknown
1	No	0	3	8	0	4	1	3	3	0
	Yes	1	3	7	0	2	2	2	5	0
2	No	8	5	6	0	1	1	4	13	0
	Yes	0	0	2	0	0	1	1	0	0
3	No	3	5	20	1	15	0	1	11	2
	Yes	2	2	23	0	11	4	2	10	0
4	No	6	6	5	0	12	2	0	3	0
	Yes	1	2	0	0	1	1	0	1	0
5	No	14	12	16	0	3	2	5	32	0
	Yes	0	0	0	0	0	0	0	0	0
6	No	6	3	4	0	3	0	0	9	1
	Yes	3	6	9	1	8	1	2	6	2
7	No	14	9	41	2	18	8	4	33	3
	Yes	1	17	63	2	18	15	8	42	0
8	No	4	5	3	0	0	1	1	10	0
	Yes	0	0	0	0	0	0	0	0	0
9	No	8	3	19	3	5	2	10	10	0
	Yes	3	0	32	3	12	9	8	7	0
10	No	1	0	2	0	2	0	0	1	0
	Yes	2	2	4	0	0	2	1	5	0
11	No	2	2	7	3	3	3	1	5	0
	Yes	1	4	14	2	8	4	2	7	0
12	No	4	1	2	0	0	0	3	4	0
	Yes	1	1	1	0	1	0	0	2	0
13	No	7	5	0	0	1	2	0	9	0
	Yes	0	0	0	0	0	0	0	0	0
14	No	6	11	0	1	2	2	4	10	0
	Yes	0	0	0	0	0	0	0	0	0
15	No	6	4	6	1	2	3	2	10	0
	Yes	0	1	5	0	3	1	1	1	0
16	No	2	2	2	0	0	1	0	5	0
	Yes	0	0	0	0	0	0	0	0	0
17	No	36	20	21	1	17	12	3	46	0
	Yes	3	3	4	1	3	2	0	6	0
18	No	3	4	2	0	0	1	3	5	0
	Yes	1	1	0	0	0	1	0	1	0
19	No	11	13	13	4	4	5	6	26	0
	Yes	1	0	1	0	0	0	1	1	0
20	No	5	4	1	0	0	0	0	10	0
	Yes	0	0	0	0	0	0	0	0	0
21	No	3	6	22	7	13	3	6	10	0
	Yes	0	7	27	2	10	3	12	11	0
22	No	1	2	0	0	0	0	0	3	0
	Yes	0	0	0	0	0	0	0	0	0
23	No	15	15	55	4	36	17	3	31	2
	Yes	6	4	23	1	14	4	1	15	0

TABLE 3 con't.

Area No.	Sewage Problem	Years in Use 1-5	6-10	10+	Unknown	Frequency Septic Tank Cleaned - Years 1-3	4-6	7+	Never	Unknown
24	No	6	4	1	0	2	3	1	5	0
	Yes	0	0	0	0	0	0	0	0	0
25	No	1	0	8	0	3	2	2	2	0
	Yes	0	0	6	0	3	2	0	1	0
26	No	0	2	0	4	0	0	1	3	0
	Yes	1	3	1	1	2	1	2	1	0
27	No	13	3	2	0	0	1	0	17	0
	Yes	0	0	0	0	0	0	0	0	0
28	No	4	4	4	0	0	0	0	12	0
	Yes	0	0	0	0	0	0	0	0	0
29	No	4	3	12	1	1	2	3	14	0
	Yes	2	1	4	0	4	1	0	2	0
30	No	7	9	0	2	1	2	1	14	0
	Yes	0	0	0	0	0	0	0	0	0
31	No	14	6	16	2	9	3	9	17	0
	Yes	2	1	1	1	2	1	0	1	0
32	No	2	6	4	1	1	2	2	8	0
	Yes	0	1	2	0	0	2	1	0	0
33	No	3	4	4	0	5	0	0	5	1
	Yes	0	4	4	0	4	0	0	4	0
34	No	21	22	63	3	24	18	11	52	4
	Yes	8	21	52	8	21	19	6	30	7
35	No	1	2	2	0	2	0	0	3	0
	Yes	0	1	5	1	0	0	1	6	0
36	No	2	0	4	0	1	0	2	3	0
	Yes	1	0	4	1	4	0	0	2	0
37	No	75	47	71	3	67	12	9	101	7
	Yes	4	14	19	2	17	1	2	18	1
38	No	17	2	5	1	4	1	2	18	0
	Yes	0	1	0	0	1	0	0	0	0
39	No	22	6	23	2	9	6	5	33	0
	Yes	0	0	2	0	0	0	2	0	0
40	No	4	4	7	0	0	1	1	13	0
	Yes	0	0	0	0	0	0	0	0	0
41	No	5	4	15	3	5	5	3	13	0
	Yes	1	2	4	1	1	0	0	6	0
42	No	3	2	6	1	3	2	3	4	0
	Yes	2	1	6	1	2	2	0	6	0
43	No	3	6	1	0	2	0	2	6	0
	Yes	0	2	2	2	0	2	1	3	0
44	No	1	2	0	0	0	1	0	2	0
	Yes	2	1	2	0	3	0	1	1	0
45	No	2	1	1	0	1	0	1	2	0
	Yes	0	0	0	0	0	0	0	0	0
All Areas	No	375	279	504	50	281	127	117	646	20
	Yes	49	106	329	30	155	81	57	207	10

TABLE 4. Comparison of Sewage Problems with Soil and Ground Conditions

Area No.	Soil and Ground Conditions	Percent of Homes with sewage problems
27	Good	0%
28	Good	0%
30	Good	0%
40	Good	0%
39	Good	2.9%
19	Good	3.5%
2	Good	7.1%
31	Good	9.1%
37	Fair	16.6%
41	Fair	18.2%
29	Fair	20.0%
15	Fair	25.0%
23	Fair	27.6%
43	Poor	37.5%
33	Poor	42.1%
34	Poor	45.0%
3	Poor	48.3%
21	Poor	48.7%
9	Poor	53.6%
7	Poor	55.7%
6	Poor	59.4%
11	Poor	60.0%

TABLE 5. Water Sample Data

Lake sampled & location	Number of Samples	Average Values Total coliform Count/100 ml.	Fecal coliform Count/100 ml.	Enterococci Count/100 ml.	Nitrate Nitrogen ppm.	Total Soluble Phosphorous - ppm.
Boulder Lake, 54-14	3	756	12	44	1.3	.064
Caribou Lake, 51-16	10	219	8	33	1.0	.096
Comstock Lake, 55-15	9	733	97	39	1.1	.447
Dodo Lake, 53-16	3	150	1	38	1.0	.032
Fish Lake, 52-15	3	100	3	15	0.5	.064
Baby Grand Lake, 51-16	2	340	6	7		
Little Grand Lake, 51-16	5	52	4	34	1.0	.925
Grand Lake, 51-16	7	31	14	28	1.0	.127
Hartley Pond, Duluth	9	2241	48	111	1.2	.159
Island Lake, 53-14	3	99	3	10	1.2	.064
Leora Lake, 53-16	3	110	2	25	0.5	.127
Nichols Lake, 53-17	3	520	5	406	0.6	.319
Prairie Lake, 50-20	4	4425	5	59	1.0	.351
Rice Lake, 51-15	6	2735	2	24	1.0	.542
Rose Lake, 53-16	3	10	0	63	1.0	.064
Twin Ponds, Duluth	18	1312	47	177	1.0	.478
Whiteface Lake, 56-15	3	383	2	61	1.0	.096
Ely Lake, 57-17	12	101	0	1		
Long Lake, 57-17	5	136	0	1		
Horse Shoe, 57-17	3	447	0	1		
Stream to Long Lake, 57-17	1	500	15	10		
Mud Lake, 57-17	1	640	2	8		
Fayal Pond, 57-17	1	1300	25	48		
Side Lake, 60-21	4	108	7	13		
Little Sturgeon Lake, 60-21	4	92	5	18		
Sturgeon Lake, 60-21	2	10	1	3		
West Sturgeon Lake, 60-22	1	130	4	9		
South Sturgeon Lake, 60-21	2	210	3	5		
Birch Lake, 61-12	3	203	0	68		.096
Eagles Nest Lake #1, 62-14	1	90	3	41	1.4	.351
Eagles Nest Lake, #3, 62-14	4	70	1	236		.319
Eagles Nest Lake #4, 62-14	3	13	0	219		.415
Sand Lake, 60-18	1	30	43	14	1.0	.032
Little Sand Lake, 60-18	1	70	0	152	1.0	0
Little 14 Lake, 60-19	1	10	1	19	1.2	.064
Lake 14, 60-19	1	0	1	3	.75	.255
Lake Leander, 60-19	1	0	0	2	.75	.096
Dark Lake, 60-19	1	470	0	2	0	0
Clear Lake, 60-19	1	150	1	19	.75	0
Big Rice Lake, 60-17	1	1700	2	530	1.0	0
Perch Lake, 60-21	1	0	0	9	0	0
Longyear Lake, 58-20	4	3310	15	30	.8	.159
Embarrass Lake, 58-16	4	2940	11	28	1.0	.447

TABLE 5 Con't.

Lake sampled & location	Number of Samples	Average Values				
		Total coliform Count/100 ml.	Fecal coliform Count/100 ml.	Enterococci Count/100 ml.	Nitrate Nitrogen ppm.	Total Soluble Phosphorous - ppm
Wynne Lake, 59-15	1	36	0	10	1.0	.478
Sabin Lake, 59-15	1	2200	0	13	1.0	.542
Cedar Island Lake, 58-16	1	1100	14	2	0.8	.734
Eshquagama Lake, 58-16	1	580	2	66	1.2	.510
Whitewater Lake, 58-14	1	630	1	5	1.0	.415
Colby Lake, 58-14	1	700	0	3	1.2	.510
Bass Lake, 57-16	1	90	2	13	.6	1.02
Lost Lake, 57-16	1	1200	22	11	1.5	.638
Long Lake, 56-16	2	2135	9	40	.9	.415
Loon Lake, 57-15	1	100	11	13	2.2	
Twin Lake, 57-15	1	800	0	68	.8	
Harvey Lake, 57-17	1	4000	0	23	1.2	
Fig Lake, 56-17	2	1380	6	32	1.0	.478
Elliot Lake, 56-17	1	140	4	3	.8	.383
Murphy Lake, 56-17	1	980	1	5	1.2	.478
Hiekkila Lake, 56-17	2	4600	0	29	1.1	.159
Stone Lake, 56-17	1	370	2	11	1.2	.638
Pleasant Lake, 57-17	1	400	55	5	1.0	.510
Elbow Lake, 57-18	1	30	0	0	1.0	.383
Lake Vermilion, 62-15, 16	6	460	2	3	1.2	.319
Burntside Lake, 62-13	1	20	0	4	1.0	.191
Bear Island Lake, 61-12	1	120	0	6	1.0	.319
Long Lake, 59-21	1	300	0	1	1.2	.255
Dewey Lake, 59-21	1	380	1	2	1.0	.894
Kelly Lake, 57-21	1	250	2	9	1.0	.478
Harriett Lake, 55-21	1	240	2	2		.064
Janet Lake, 55-21	1	360	1	17	1.2	.255
Island Lake, 55-21	1	190	0	13	1.0	.255
Mashkenode Lake, 58-18	1	640	301	10	1.4	.223
Ash Lake, 66-20	1	1540	0	5	1.2	.702
Moose Lake, 65-14	1	540	0	4	1.2	.319
Myrtle Lake, 65-18	1	148	0	1	1.0	.415
Pelican Lake, 64-19	2	850	5	6	1.1	.542
Little Fork River, 62-19	1	6560	186	79	1.4	.638
Manganika Lake, 58-18	1	43	0	0	1.4	1.43
Halfmoon Lake, 57-17	1	134	0	1	1.0	.319
St. Louis River, 56-17, 58-15	2	2615	14	0	1.2	.510
Pike Lake; 51-15, 16						
Sampling Station #1	20	1122	19	42	1.3	.782
Sampling Station #2	20	819	19	64	1.2	.534
Sampling Station #3	20	351	2	22	1.4	.631
Sampling Station #4	20	1319	50	52	1.4	.711
Sampling Station #5	20	334	4	26	1.2	.455
Sampling Station #6	20	2066	37	35	1.4	.490
Sampling Station #7	5	842	19	44	1.5	.474
Sampling Station #8	5	88	0	16	1.5	.410
TOTAL	225					

R. Roningen

Briefly, this report shows that there are serious pollution problems along the lakeshore, extending back perhaps a half mile or so from the shore of the lake. At that time, 45 percent of the septic systems had failed and the rest are failing, and there is now raw sewage flowing directly into Lake Superior. There will be more raw sewage going directly into Lake Superior in the near future as more systems fail.

The sewage that is flowing from our two townships into Lake Superior is carried by the currents of Lake Superior in a southwesterly direction and this current passes directly over the water intakes for the city of Duluth and the U. S. Water Quality Laboratory located at Lester River. As a result, it is just a matter of time before this discharge is going to contaminate both water supplies.

The reason these septic tanks are failing is because of the unique geology of the area. The area has a bed-rock of old basalt lava flows, which is within just a few feet of the surface. This is overlaid by red clay. Both of these materials are impervious to water absorptions and as a result the only absorptions for the septic systems are materials which have been hauled in and placed in the trenches of the leeching fields. As soon as this material becomes saturated the system fails, causing the sewage to

R. Roningen

flow into the ditches and on into Lake Superior.

The towns of Lakewood and Duluth have been very active in the past in their efforts to control this. They have called public meetings and have approached various governmental bodies on ways and means of controlling this problem.

One of the preliminary emergency steps that was taken by the St. Louis County Health Department was to prohibit the building of new septic systems. This step has been responsible for effectively stopping the upgrading of existing systems and new construction, which is not what we want. It also has the side effect of destroying property values and progress.

The town of Lakewood and the town of Duluth have also attempted to apply to HUD for a feasibility study to correct this problem. At the present time the application is waiting for funding of the program.

Very recently NEMDA has proposed regional sewage plants for the Duluth, Superior and Cloquet areas. It is our feeling that this plant should also include the area to Knife River as we feel it is the most economical solution to our problem. We feel that if a trunk sewer line were placed along the old Highway 61 the local government and residential units would be able to then put their feeder lines and collector systems into it. This would solve the problem completely.

To implement this, we ask that this conference recommend that the area served by the regional sewer plant be enlarged to include this area.

Another thought that we have had is, that it is our understanding that the U. S. Corps of Engineers is considering building regional sewage treatment plants and this to us appears like an excellent opportunity for the Corps to build a model pilot plant for the Nation in our area. This plant would be the proposed NEMDA Regional Treatment Plant.

We urge that our U. S. Representative, the Honorable John A. Blatnik, who is Chairman of the Committee on Public Works, introduce such legislation forthwith to preserve this area.

Thank you.

MR. STEIN: Where did you get the idea that the Corps was going to build a regional sewage treatment plant?

MR. RONINGEN: I have been doing some talking with other people around this area.

MR. STEIN: Well, I would check that a few times before you went to that assumption.

MR. PURDY: I have one question.

I am wondering if the townships are prepared to pay for that trunk sewer, or are they expecting NEMDA to pay the cost of the trunk sewer and they will only participate in the lateral system?

MR. RONINGEN: This is something for negotiation. We have to solve the problem somehow. We have to work out whichever is best, whoever seems to be the solution at that time. Naturally the townships want to pay as little as possible, but they understand the reality that they have to pay something, too.

MR. STEIN: Are there any other questions?

MR. BADALICH: Mr. Chairman, I was going to state that I believe the head of the Lakes Inter-Governmental Council is applying to EPA for a planning grant to try to tie down with the NEMDA boundaries, and I am sure that this area that Mr. Roningen is talking about will be given great consideration.

We are hoping this can be done concurrently, at the same time as the legislation to create the district, and if we are successful this will be done.

MR. RONINGEN: Thank you.

MR. STEIN: Would you proceed, Mr. Badalich?

MR. BADALICH: Yes.

Mr. Chairman, next I would like to call upon the Abex Corporation of Two Harbors. I believe Mr. Hand indicated a desire to be heard.

STATEMENT OF BRYAN HAND, WORKS MANAGER,
ABEX CORPORATION, AMSCO DIVISION,
TWO HARBORS, MINNESOTA

MR. HAND: Mr. Chairman, conferees, ladies and gentlemen.

I represent the Abex Corporation in Two Harbors, which is a foundry engaged in producing steel castings.

I would like to say that we are now actively engaged in negotiations with the Minnesota Pollution Control Agency, and we are prepared in the immediate future to enter into a legal agreement.

Thank you. That is all I have to say.

MR. STEIN: Do you have any comment on that?

MR. BADALICH: No, not at this time, Mr. Chairman. I believe this is being analyzed by the staff, and we will be coming up with a solution. In fact, I believe this company will be receiving a compliance schedule on how to solve that particular problem.

MR. STEIN: Any other questions or comments?

If not, thank you very much.

MR. BADALICH: Thank you, Mr. Hand.

Next, Mr. Chairman, I would like to call upon the city of Two Harbors. I believe they are represented by Mr. Ray Gustafson and Mr. Ray Ode.

Not here?

Next, Mr. Chairman, I have a Mr. Don Mimette representing C.H.O.K.E., Cathedral High School Opposed to the Killing of the Environment.

Mr. Mimette.

STATEMENT OF DON MIMETTE, C.H.O.K.E.,
DULUTH, MINNESOTA

MR. MIMETTE: Mr. Chairman, distinguished conferees, ladies and gentlemen.

I represent C.H.O.K.E., Cathedral High Opposed to the Killing of the Environment. This is an organization that has been formed at our school to try to keep this area an area of natural beauty.

One of the first things we have done in this organization was to come to the meeting in October -- the conference in October. We were there. We sent representatives there, and we have observed at that conference and the conference in April after that.

We at first hoped that the problem would have been solved then. It wasn't for various reasons, but we feel, if at all possible, that it should be solved right now. We believe that something should be done now, because Lake Superior must be saved at all costs.

We have heard quite a bit of evidence and the conferences we have attended that this has caused -- this will cause damage on the area, has caused damage. We have heard some spokesmen by Reserve saying that it is not all that dangerous, and the possibility that the density currents would bring it to the bottom of the lake so that it would not affect the lake.

I would also like to bring to mind that density was supposed to bring mercury to the bottom of a lake so that mercury would not cause any harm.

They said that tailings, since they are inert, would probably cause no harm. DDT was not supposed to kill fish. DDT was not supposed to kill birds.

We believe that there is quite a bit of evidence shown that there is a great possibility that the tailings produced by Reserve could produce quite a bit of harm. We admit there is a possibility that it might not be harmful, that there is a chance that Reserve could pollute and get by without ruining the lake, but we believe that this is not enough.

We believe, as young people, we have a special interest in this because if pollution continues to go on, and if the lake is damaged, it is us who will suffer; it is us that will have to pay for any reconstruction of the lake; it is us that will not be able to swim and will not be able to use the lake for drinking water.

I would like to say that we do admit that there is a possibility that Reserve can continue polluting the lake, and there is a chance that it will not be harmful, but we do not think it would be prudent to play Russian Roulette with the greatest freshwater body in the world. (Applause)

MR. STEIN: Thank you.

Any comments or questions?

If not, thank you very much.

MR. MIMETTE: Thank you.

MR. BADALICH: Thank you, Mr. Mimette.

Mr. Chairman, next I have Mr. John C. Green, Professor of Geology at the University of Minnesota, Duluth. He filed a statement, but I believe he wanted to read this. If not, Mr. Chairman, I will file this written statement with the conference.

MR. STEIN: Without objection, that will be entered into the record as if read.

(The above-mentioned statement follows in its entirety.)

Statement for the Record of the Reconvened Lake Superior Pollution Enforcement Conference

14-15 January, 1971

It is extremely important to minimize the deleterious environmental effect of any industrial process, municipal facility or private use on magnificent and irreplaceable Lake Superior. On the other hand, we must also be fully aware of environmental implications of alternative proposals when changes in current, harmful practices are considered. In the long run, drastic changes that involve major and sudden dislocation of people and industry can be more harmful to the general public good than more deliberate, thoughtful solutions in which all alternatives have been thoroughly investigated and tested, and the best long-term method of preserving environmental values has been found.

In the case of Reserve Mining Company's taconite tailings disposal problem, I as a geologist and also an environmentalist feel that (a) it is only the "fines", that escape the 3-mile limit, that are causing the problem; the coarser tailings that rapidly flow to the bottom or add onto the delta are neutral as far as the esthetic, biological and other environmental aspects of the Lake are concerned; and that (b) it would be esthetically very harmful and perhaps dangerous to the public to construct on shore tailings disposal at Silver Bay; and that (c) there are serious environmental risks involved in establishing a large onshore tailings basin inland " over the hill" from Silver Bay, unless it were many miles away (farther than Lax Lake area), the dam could be made permanently secure, water quality could be guaranteed at current State standards, and a wind blown dust problem could be prevented from arising. In my estimation, some combination of

Reserve's Alternate Methods No's 4, 11, 12, 14, 17, 18 (April, 1970) properly and fully researched, funded and monitored, would be the best compromise.

Another potential problem for Lake Superior, that this Conference should consider, is the future development of power plants in its drainage basin. Although the area surrounding the Lake is not a large market for power, Lake Superior does offer a very attractive source of coolant for either fossil fuel or nuclear power plants or breeder reactors; some mention of these has already been made in the press. The cold water of the lake is one of its prime and distinctive attributes, and this Conference and the Conferees individually must establish standards for thermal pollution that will guarantee minimal effect. In particular, a well-funded program of research must be initiated to study by models or otherwise how a local source of hot water such as might be emitted by a power plant would be dissipated or distributed throughout the lake. This would necessitate a thorough understanding of lake water circulation and convection at various levels and the various effects of different volumes, methods, depths, and areas of discharge of waters of different temperatures. Such a study should also investigate the meteorological implications of warmer water on the surface of Lake Superior, and its possible effect on snowfall on adjacent land areas.

John C. Green

John C. Green
Professor of Geology
University of Minnesota, Duluth

MR. BADALICH: Mr. Chairman, I also have a written statement by U. S. Steel Corporation, which I would also like to have filed with the conference.

Is that accepted, Mr. Chairman?

MR. STEIN: Yes.

What happened to Dunsmore? They just had an air problem or what?

MR. BADALICH: They sort of have a small air problem.

MR. STEIN: Are they bashful?

All right. This will be entered as if read.

(The above-mentioned statement follows in its entirety.)

MR. BADALICH: I believe the gentleman is here, but they filed a written statement.

MR. STEIN: All right.

United States Steel Corporation
525 William Penn Place
Pittsburgh, Pa. 15230

H. J. DUNSMORE
DIRECTOR · ENVIRONMENTAL CONTROL

January 11, 1971

Mr. J. P. Badalich, Executive Director
Minnesota Pollution Control Agency
717 Delaware Street, S.E.
University of Minnesota Campus
Minneapolis, Minnesota 55440

Dear Mr. Badalich:

Reference is made to your notice dated December 29, 1970 of the reconvening of the Federal-State Conference on Lake Superior and its tributary basin on January 14 and 15, 1971.

At the preceding session of this conference, held in Duluth on August 12 and 13, 1970, a statement in behalf of United States Steel Corporation was submitted and was filed with the records of the conference. That statement reviewed the background and the steps leading up to and culminating in the adoption by the Minnesota Pollution Control Agency on June 19, 1970 of a resolution accepting the program of United States Steel for improvements in air and water quality at the corporation's Duluth steel works and Universal Atlas Cement plant, as stated in a letter dated June 17, 1970 from USSC to Mr. Badalich.

This conference on Lake Superior is, of course, concerned only with water conditions. The program of USSC insofar as it pertains to water conditions was set forth in the June 17, 1970 statement. USSC has proceeded with this program and with the construction, installation and other work and obligations thereunder.

Extra copies of this letter and the progress report are enclosed for filing with the conference on January 14-15 if you choose to do so.

Very truly yours,

HJ Dunsmore

Attachment

PROGRESS REPORT
UNITED STATES STEEL - DULUTH STEEL WORKS
WASTE WATER TREATMENT PROGRAM AS ACCEPTED BY MPCA 6-19-70
(INTERIM PERMIT WPC5981 DATED 8-20-70)

U.S.STEEL PROPOSED WATER QUALITY CONTROL PROGRAM	SCHEDULED COMPLETION DATE	STATUS OF PROJECT AS OF DECEMBER 31, 1970
1. Install a controlled lubrication system in the Merchant Mill	July 1971	NALCO conducted tests January 26 and 27, 1970. Order placed. Installation completed December 1970.
2. Install additional oil skimming and removal facilities complete with necessary auxiliaries and utilities at the Wire Mill settling pond	July 1971	Phase I - Install oil skimming, storage and disposal facilities. Two mechanical skimmers ordered. Received 4-30-68. Order for oil pump placed 6-17-68. Received 7-17-68. This installation, per Construction Permit WPC 5378 dated 4-17-67, was completed October 1968. Phase II - Install improved floating baffles, fixed steel baffle, scum pipe, and straw filter baskets. Turnkey contract placed 8-28-70. 60% complete. Work has terminated because of winter conditions. Will resume construction about April 1, 1971.
3. Install a chlorination system complete with chlorine storage building and necessary auxiliaries and utilities for the reduction of the coliform content in the Wire Mill outfall which serves the rolling mills, fence post fabrication, open hearth shop, wire mill and maintenance shops sanitary stations	Dec. 1970	Turnkey contract placed with Arthur G. McKee 7-31-70. Work is completed except for alarm system which is due in February 1971. Chlorination Station was placed in service December 23, 1970.

U.S.STEEL PROPOSED WATER QUALITY CONTROL PROGRAM	SCHEDULED COMPLETION DATE	STATUS OF PROJECT AS OF DECEMBER 31, 1970
4. Maintain the existing settling basins at optimum solids removal efficiency, investigate and experiment to find effective coagulant aids for blast furnace waste water to improve flocculation and settling, and take other reasonable steps that may be effective in improving the turbidity and suspended solids of the blast furnace outfall	July 1970	a) Maintain Coke Plant Pond by dredging February-March 1964 - 30,000 yds. March-July 1967 - 82,000 yds. June-September 1969 - 50,000 yds. July-October 1970 - 50,000 yds. b) Full scale testing of polymers for use as coagulant aids were conducted during 1969 and 1970 with only limited success in reducing suspended solids and turbidity. Duluth Works will continue to conduct tests to determine appropriate steps that will improve effluent conditions.

U.S.STEEL PROPOSED WATER QUALITY CONTROL PROGRAM	SCHEDULED COMPLETION DATE	STATUS OF PROJECT AS OF DECEMBER 31, 1970
5. Consider construction of a sewer line to Municipal system for sanitary wastes and other organic wastes amenable to biological treatment from Coke Plant and Blast Furnace areas that is acceptable to Municipal authorities	Nov. 26, 1973	Meetings have been held with the City of Duluth. The nature of the organic wastes presently raises some doubt of acceptance by the City. The NEMDA proposed regional plan may be more conducive to accepting this organic waste.
6. Thermal Effects (Per MPCA Interim Permit No. 5981 dated 8-20-70) The discharge of the effluents shall be controlled so that heat shall not be added to the river in excess of: an amount which would raise the temperature of the river, after reasonable opportunity for mixing and dilution, by more than 5° F. above its natural background temperature except that in no case shall temperature of river attributable to this effluent exceed 86° F.	1970 - 1971	First test conducted November 19, 1970 indicated an average temperature rise of less than 0.5° F. Further temperature tests will be conducted in the spring and summer of 1971. The uncertain and hazardous ice conditions of the St. Louis River at the two industrial waste water discharges to the River preclude testing water temperature during winter months.
7. Engineering inventory of industrial and sanitary liquid wastes	Dec. 1970	Report submitted with letter of transmittal dated 10-21-70. Delivered report to J. P. Badalich during meeting at MPCA office 10-23-70.
8. Monthly Report of Effluent Quality	Nov. 1967	Monthly reports of weekly analysis of effluent waste water quality have been submitted to the MPCA since November 1967.

MR. BADALICH: Next, I have a written statement from the Public Utilities Commission, Village of Hibbing, which I would also like to have filed. We might save a little time here, Mr. Chairman.

MR. STEIN: We appreciate that.

MR. BADALICH: Next, Mr. Chairman --

MR. STEIN: Now, the best way these corporations can save time is to show up at these things. The time we waste is waiting for them to clean up their problems. I will give them the time here if they want it.

MR. BADALICH: We have to pass out a little solid waste, too.

Mr. Chairman, next, I have a statement from the Public Utilities Commission, the Village of Babbitt.

MR. STEIN: Just a minute, on the Village of Hibbing. This statement will be entered into the record, as if read.

(The above-mentioned statement follows in its entirety.)

PUBLIC UTILITIES COMMISSION
VILLAGE OF HIBBING
HIBBING, MINNESOTA - 55746

January 12, 1971

State of Minnesota
Pollution Control Agency
717 Delaware Street S.E.
Minneapolis, Minnesota 55440

Attention: John P. Badalich, P.E.
Executive Director

Subject: Phosphate Concentration in Effluent Waters
from Power Plant

Gentlemen:

Please be advised that the phosphate use in our Power Plant is for boiler water control purposes only and is controlled at 20 PPM in the boilers. This same concentration exists at the point of blow down. When diluted with other discharge waters this level of concentration is reduced to .66 PPM at the point of discharge from the plant to the main sewer line.

The present plant lines discharge to the storm sewer system. To change this would create a great inconvenience and a sizable amount of money.

Our present plans call for the elimination of use of all phosphates on or about June 1, 1971.

If further specific information is required, please feel free to contact us immediately.

Very truly yours,

PUBLIC UTILITIES COMMISSION

H. G. Anthony
Chief Engineer

HGA:se

cc: Richard D. Miller

MR. BADALICH: Next, I have a statement from the Village of Babbitt, the Public Utilities Commission, which I would also like to have filed in the conference.

MR. STEIN: Without objection, this statement will be entered into the record as if read.

(The above-mentioned statement follows in its entirety.)

STATE OF MINNESOTA,
POLLUTION CONTROL AGENCY
Mr. John Badalich, Director;

CONFERENCE OF THE FEDERAL POLLUTION CONTROL AGENCY.

Dear Sir:

On August 12, 1970, the Village of Babbitt appeared before the Federal-State Conference on Pollution of the Waters of Lake Superior and tributary basin. At that appearence a request of a variance from the Pollution Control Agency's order for Phosphate removal was made. This request was based on evidence as submitted at the Conference.

The Village of Babbitt requests that all evidence as submitted be investigated. At the conclusion of said investigation, should our request for a variance be denied, the Village of Babbitt is ready and willing to proceed as recommended.

We might add that on January 5, 1971, a specialist of the Pollution Control Agency was in Babbitt to investigate our situation, but as of this date we have not received his report of the findings.

To further substantiate our request for a variance please find attached copy of a letter from, W. John Blakesley, Area Fisheries Manager.

PUBLIC UTILITIES COMMISSION:
Village of Babbitt, Minnesota 55706

Don Cole
Don Cole, Chairman

Richard Mahal
Richard Mahal, Mayor

Area Fisheries Hdqtrs.
Box 147
Winton, Minnesota 55796

January 13, 1971

Donald Cole
46 Fern Court
Babbitt, Minnesota

Sir:

Upon request by Mr. E. F. Jordan, Babbitt, Minnesota, I am writing you concerning the effects of the Babbitt sewage disposal on fish life in Hay Lakes Twp 60 Rge 13 Sec 1,2,3.

Our management on Hay lakes is very limited. We harvest or rescue only the Northern Pike which would normaly be lost due to winter oxygen depletion.

I know of only two reasons why we have a fish kill in Hay lakes:

1. normal summer run off leaving fish stranded in shallow water
2. normal winter oxygen depletion, which occurs every winter due to shallow water and vegitation of the lakes.

Yours truly,

Signed:: W. John Blakesley
Area Fisheries Manager

MR. BADALICH: Mr. Chairman, I have a short letter here in behalf of the Village of McKinley, from the engineering firm of Toltz, King, Duvall, Anderson and Associates of St. Paul. It is addressed to our Agency regarding the conference.

"Gentlemen:

"Your attention is drawn to a previous statement on behalf of McKinley, Minnesota, dated August 12, 1970. At that time, it was indicated that the Village intended to conform to a schedule for planning and construction of treatment facilities which was in accordance with the recommendations of the conferees. This is still McKinley's intention.

"Very truly yours, Harry G. Brown, Engineer for Toltz, King, Duvall, Anderson and Associates."

Mr. Chairman, at this point, I believe I should ask again: Is there any representative of the League of Women Voters here at this time?

If not, Mr. Chairman, I would like to turn this over to Mr. Ed Fride, representing the Reserve Mining Company, to continue with their presentation.

MR. MAYO: I have a question about the letter from Babbitt. It addresses itself to a request for a variance with respect to phosphorus removal.

MR. BADALICH: Yes, it does, Mr. Mayo. This will be considered by the Agency at the next reulgar meeting of the Agency to see what disposition will be made of this.

MR. MAYO: My point is that this letter is directed to the conferees, to the conference as a whole, for some sort of a variance. We would hope to get guidance from Minnesota in terms of your recommendation on this.

MR. BADALICH: I think, at this point, it might be a little premature. I haven't discussed this with the staff at this time, and the Agency will be considering this matter. I believe, Mr. Mayo, it was addressed to me.

MR. STEIN: Right. It says Badalich. But I don't think we want to be technical about this. I think this is appropriate, if you agree, for the Minnesota Agency to handle this in its regular course of business.

MR. BADALICH: Yes.

MR. STEIN: And if you think it is appropriate to report to the conference --

MR. BADALICH: We certainly will and this has been our intention with all of these dischargers. As soon as they get out of compliance, the conference will be informed.

MR. STEIN: Right. I think this is just a technicality that we should put back on the track.

MR. PURDY: Did I understand, from the standpoint of phosphorus removal, it was left to the State to determine how to accomplish the overall objective of 80 percent total phosphorus removal, and that if the State could acquire this at one location, fine?

MR. STEIN: Yes.

But this is up to the State to deal with each locality. As far as I am concerned, we have had no problem with any of the States on Lake Superior as well as on Lake Michigan and on Lake Erie in the concept of the phosphate program. But I think we had best leave the community work with the State.

Now, let me ask for the rest of the day -- Mr. Fride, how long do you think the presentation will take in total?

MR. FRIDE: About 2 hours, I would think, Mr. Chairman. That wouldn't allow much time for questioning.

MR. STEIN: No. No. I think we had better go -- and I don't want to rush it, when they are too tired -- let us recess and then come back to a determination. But I think maybe we better go, after you conclude, and just asking the conferees, for about an hour and then perhaps have an hour again when we start in the morning from Reserve, which will give the rest of the time that the conferees can ask their questions. Because, again, on the basis of experience, I know what happens when you go to the end of the day, and you get toward 5:00 o'clock, and you begin working these questions back and forth. Sometimes we get the Aurora Borealis, and we get more heat than light or light than heat.

So, unless I hear to the contrary when we recess and have a consensus, at least the proposal I have is that we take about a 15-minute recess, you go for an hour, then we recess for this evening. We come back in the morning and we go for another hour until you finish, and then we will ask questions.

Also, if we are going to do this, if anyone else feels that he wants to make a statement, and he cannot be here tomorrow and wants to do it today, we will give him an opportunity to make the statement today.

Again, I hope everyone will try to be brief, and we will stand recessed for 15 minutes.

(Short recess.)

MR. STEIN: Let's reconvene.

Mr. Badalich.

MR. BADALICH: Yes, sir.

MR. STEIN: Do you want to continue?

MR. BADALICH: Mr. Chairman, I would like to call upon Mr. Ed Fride, representing Reserve Mining Company, who will start the testimony for Reserve, and the outlay of their proposal regarding the different method of deposition of their taconite tailings.

MR. FRIDE: Thank you, Mr. Badalich.

Mr. Chairman, ladies and gentlemen.

Reserve's presentation with respect to the engineering plan which the conferees have called for will involve basically three participants. We intend to call Mr. Edward Furness, President of the Company. We will then call Mr. Carl Skinker, who is the Vice-President of Parsons-Jurden Company of New York City, who have done the engineering design. And then we will call on Dr. Leon Weinberger, who is an environmental consultant, who will discuss some of the environmental consequences of the plan.

In the interest of time, Mr. Chairman, I am wondering -- and to provide the conferees with the kind of continuity which we hope the last two presentations will evolve -- I would ask that we adjourn after Mr. Furness' presentation today.

MR. STEIN: Without objection, I think we will do this.

I think we should get a full presentation with full continuity as the Company sees fit and, as I understand it, it is your notion that if we do it the other way, it will be split.

MR. FRIDE: I think that is right, Mr. Chairman. We will have a slide presentation, and I think the two concepts -- the engineering and the environment -- are so tied together that that would provide the best presentation.

MR. STEIN: There will be no objection to that.

MR. FRIDE: With that, then, Mr. Chairman --

MR. STEIN: Let me ask you a question before you go, Mr. Fride, as long as you are up here. I don't get the benefit of this free legal advice from a man of your stature very often.

What do you think -- we heard a reference this morning to an order of the court relating to Reserve -- what is your view of that?

MR. FRIDE: My view of the entire order?

MR. STEIN: No. I am not on the Supreme Court of Minnesota yet. I guess they are going to hear that. No, just a reference to this morning.

MR. FRIDE: I must just say as long as you bring up the order, Mr. Chairman, that I am inclined to agree with the Court's comment that his order, as he saw it, was such that it wouldn't please either party completely nor perhaps please every segment of the public, but that he regarded it as a very concrete and important step in the right direction.

I do look at it as an order, as a directive to both the Minnesota Pollution Control Agency and to Reserve Mining Company to either agree upon a plan which will meet the major concerns expressed by the Court and by this conference, or in the event that those two agencies are not able to arrive at some kind of a reasonable resolution and a specific plan, that the Court would retain jurisdiction for the purpose of enforcing his directive. So I do regard it as a directive and as an order, which is binding upon the parties unless it were reversed on appeal.

MR. STEIN: Yes. But as far as I can see, if you are in default of doing this, the Judge would have to get you back into Court and decide what to do. If any violation of this would not involve a violation which would be subject to punishment, per se, he would have to get you back in there again.

MR. FRIDE: Well, I think with the Court's retaining jurisdiction, we are only a phone call away from being back up in the Court House, and I do think that the State District Judge as well as the Federal

Judges, as you well know, Mr. Chairman, have a very broad range of the kind of powers that they can utilize to implement their decisions, and I am sure that, in this case, in my own judgment, that Reserve would be subject to those kinds of considerations.

MR. STEIN: Are there any other questions that you want to ask Mr. Fride?

If not, thank you very much, Mr. Fride.

MR. FRIDE: Thank you, Mr. Chairman.

At this time, then, Mr. Chairman, I would call on Mr. Edward Furness, the President of Reserve Mining Company.

Mr. Furness.

MR. BADALICH: Mr. Chairman, maybe before Mr. Furness gets up here — you asked that question of me this morning also about whether this was an order, or so on.

In reading a memorandum here, again, Mr. Stein -- you have it before you -- on page number 15 which is part of the order, it states that: "The attached memorandum is hereby made a part of these findings of fact and conclusions of law."

And if you go to page number 8 of the memorandum, that is where they talk about the judgment of the Court: "In the judgment of this Court, any modification must ensure the flocculation of the fine tailings and the deposit of all the tailings by conduit to the floor of the Great Trough."

I think that -- as Mr. Fride might have stated -- I believe this is an order.

At this time -- it must be reviewed by the 15th of May, and, if not, well, then, the Court will retain jurisdiction.

MR. FRIDE: I might add, Mr. Badalich, if I may, Mr. Chairman, that I think we are in agreement on that point.

I might say, too, that while the Court had directed that the plan be submitted by May 15 of 1971, Reserve has tried to and will continue to try to not take advantage of any kind of time deadlines for the purpose of any kind of a delay. We want to get this problem resolved. We would like to get it resolved as soon as possible. Frankly, we don't believe that there is any very substantial difference between the objectives that the Court has outlined, and the major concerns that have been raised at this conference. We think the same are compatible, and to that end we expect to present this plan formally to the Minnesota Pollution Control Agency at its next regularly scheduled meeting.

Mr. Furness.

STATEMENT OF EDWARD M. FURNESS, PRESIDENT, RESERVE MINING COMPANY, DULUTH, MINNESOTA

MR. FURNESS: Mr. Chairman, conferees, ladies and gentlemen.

My name is Edward M. Furness. I am President and Chief Executive Officer and a member of the board of directors of Reserve Mining Company. I live in Silver Bay, Minnesota, where our processing plant and our general offices are located. I am a graduate civil engineer and have spent most of my professional career in the iron ore mining and processing industry in New York State and Minnesota.

Reserve will present at this conference a plan for altering its disposal of waste sand called "tailings." Significantly, the cost of this plan is some $14 million -- one of the largest water quality and environmental control projects by a single industrial plant in the Nation. It represents a financial commitment by Reserve over the next 20 years of nearly $49 million -- about one-seventh of the total cost of our mining and processing facilities at both Babbitt and Silver Bay. I might mention, also, that this plan provides no financial return to Reserve on this huge investment. There is no provision for improving the quality of our product, hence no provision for improving our posture in what you know is a very competitive industry. Nothing is done to raise the iron content or to lower the silica content or to improve the physical quality of our pellets. The nearly $49 million would be spent over the next 20 years strictly and exclusively to preserve and protect the quality of Lake Superior.

Reserve undertook its engineering and technical studies not because we believed our present operations were harming or threatening Lake Superior in any way, but because we were anxious to relieve the concern some people have about Reserve's use of the lake.

In a recent Lake County District Court trial which ran nearly 7 weeks in Two Harbors, Minnesota, the entire question of Reserve's use of Lake Superior and the possible effect of tailings on the water and its aquatic life was thoroughly considered. Numerous witnesses including many outstanding scientists were questioned and testified under appropriate rules of evidence, under oath, where cross examination was permitted for the first time. The files of Reserve Mining Company as well as Federal and State agencies were opened and reviewed.

In his findings, Judge C. Luther Eckman said:

E. Furness

"After 15 years of operations and discharge of tailings into Lake Superior by Appellant (Reserve), the evidence before the Court establishes that said discharge has had no measurable adverse or deleterious effects upon the water quality or use of Lake Superior insofar as its drinking water quality, any conditions affecting public health, affecting fish life or the reproduction thereof, or any interference with navigation."

The Court found, however, two areas of possible concern: 1) a contribution by tailings to the green water phenomenon and 2) a slight decrease in the numbers of a scud, a smelt food, in the immediate area of the discharge.

The Judge stated, "Although measurable, these conditions were of minimal significance or materiality."

Emphasizing his interest in maintaining the present high quality of Lake Superior, the Court did order a modification of the present method of tailings discharge to provide for the flocculation of the tailings and their transportation by a form of conduit to the lake bottom where they present no ecological concern.

It is in response to the request of this conference made at the August 14, 1970, session, as well as to the Court's order that Reserve submits its plan for modifying its tailings discharge system. As previously reported to this conference, Reserve has retained nationally known engineering firms to propose as well as to evaluate suggestions for a modification. These include: Bechtel Corporation; Engineering-Science, Inc.; Arthur D. Little, Inc.; Parsons-Jurden Corporation; Trygve Hoff and Associates.

In addition, Reserve has retained well qualified environmental consultants to assess the impact of such proposals. The plan that we will be presenting here has been selected from the many considered as the best from the standpoint of sound conservation and technical and economic feasibility.

The plan is the product of the thinking and expertise of many people with years of experience in water management, minerals processing, mining, hydraulics, design engineering and tailings handling. The Parsons-Jurden Corporation of New York is principally responsible for the investigation and studies which led to the preliminary design and engineering plans which we will submit.

Parsons-Jurden has designed and built tailings handling and mineral benefaction systems in foreign countries and throughout the United States, including Minnesota.

We believe this plan will answer questions and concerns which have been raised about Reserve's present tailings handling system and our use of Lake Superior. At the same time, it will create no new conservation or ecological problems. We believe it is technically sound and economically possible.

We submit this plan for the approval of the appropriate regulatory agencies. As soon as approval is obtained, Reserve is prepared to complete final design and construction to make the system operable within 2 years. We believe it will answer the needs, hopes, and desires of all who share Reserve's concern for the preservation of nature while, at the same time, we enjoy the benefits which modern industry provides to us all.

Thank you.

MR. STEIN: Thank you, Mr. Furness.

Are there any comments or questions?

I would like to make one observation. Of course, we have to look at the plan first. This is without prejudging anything but in a sense I think this is really a landmark, and I hope probably a watershed in the case. Because for the first time I think we have from the Company of Reserve here a proposal to go forward with a plan. I think it is fair to say that in the past some of the state, probably governmental and local people said there was pollution, but the plant said they weren't hurting anything. Maybe they still take that same position. But I think for the first time we are in a position that the company, in the person of its President, Mr. Furness, has come forward with a plan which he believes will do the job.

I think I have mentioned this here before. I certainly have said it time and time again in other forums. In watching the democratic adjudicatory system in process, we have a system in this country that however different our philosophies may be, when we let the system work, in any specific case, we move toward a solution of the particular problem.

I think we may have gotten over an essential hurdle here, and I am very grateful.

Let me ask a couple of questions here.

Would that $14 million be an initial expenditure or over the life of the project?

MR. FURNESS: This is over a 20-year period.

MR. STEIN: Is the $49 million --

MR. FURNESS: The $49 million is over a 20-year period. The cost of the plant to construct it and build it is $14 million.

MR. STEIN: But that will be initial, fourteen?

MR. FURNESS: Fourteen.

MR. STEIN: Fourteen initial.

MR. FURNESS: And this would be for the writeoff of the moneys and the operation -- additional operating expenses for the next 20 years.

MR. STEIN: Right.

I don't want to get carried away with myself, but generally when you apply the principles we have applied to these conferences or these hearings, my instinct has been correct. Now, as I understand this: Here we have an order or a directive by a State Judge, punctured by a decision presumably coming forward after he has heard a considerable amount of evidence subject to cross examination, that he modify the present method of tailings discharge to provide for the flocculation of the tailings and the transportation by the form of a conduit to the lake bottom where they present no ecological problem.

On the other hand, we have heard from various members of the locality that the one way to do this is with an onland disposal.

We have the opinion of the Judge and the opinion of several other people. I think I would rest with the thesis that I have been pushing all day—that as far as the conferees are concerned we should keep our options open, and since we have a determination by a Judge after he had heard the evidence, and since we have heard the other people, I don't know what other course of action we have particularly. I look at this in a particular way, since both the Company and the Minnesota Agency regard this as an order and an order of the court.

And I say we have to keep both actions open because I think the record is abundantly clear. I don't think we are going to serve the cause of pollution any by creating the dilemma which some people are going to come around to, when we come in with other State representatives and the Federal Government, and say that the Governor has asked for onland disposal. I didn't note that he did, and I have asked for a transcript of that testimony so I can look at it.

Then, we have got, on the other hand, that a Court has ordered disposal in the lake bottom. I don't know how we can put these together, and as far as I can see in our form of government we have traditionally separation of the powers.

Now, I would recommend, as I have up to now, not knowing that all these facts and proposals were going to come out, that the only thing we could do in the Federal conference is keep all options open and entertain a method which will protect the lake and protect the ecology of the lake and not substitute one form of pollution for another.

Again, I think you people have sat here and have watched this record unfold the way I have watched it unfold, and I think the problem is abundantly clear.

Now, again, if any of the conferees -- of course, they can go anyway they wish, but if they have any other views on this, either they can make it known today or tomorrow when we reconvene.

Are there any other comments?

MR. FURNESS: Thank you.

MR. STEIN: Mr. Purdy.

MR. PURDY: Yes.

Mr. Furness, Mr. Fride, in his comment noted the Court's comment that his order would probably not please either party to the lawsuit or all segments of the public.

In your statement, am I correct, that even in view of this -- and Mr. Fride indicated that he was not -- the Company was possibly not fully satisfied with his order -- but do I understand that you now are going to proceed to comply with the order of the Court without further litigation?

MR. FRIDE: May I respond to that?

MR. FURNESS: Yes.

MR. FRIDE: Better do something to earn my salt here, Mr. Chairman, if you will put up with me for a moment.

MR. STEIN: Yes.

I wasn't under the impression it was salt, but go ahead.

MR. FRIDE: Very good.

In any event, I think the answer to the question, of course, is that Reserve is proposing a plan -- an engineering plan, a very definitive plan, one that will initially cost $14 million to construct. It will cost this company an additional $2.4 million per year in extra added operating costs, and over the 20-year period will cost almost $50 million.

Now, obviously, we are in a situation here where we have major concerns raised by members of this conference and by people who have testified to the conferees. We also have the question of the Court and compliance with its order. And we also have, of course, the question of revalidation of permits.

Now, obviously, I think that all of these things are to some extent tied together, and as I indicated just a few moments ago, it is my judgment that the concerns raised at this conference and the concerns raised by the Court are not at all inconsistent, and that a solution to one may very well be the solution to all.

Now, it would be folly, of course, for me to suggest to this conference that despite what the conference might decide, or despite whether or not the pollution control agency takes an appeal from this decision—as I understand, there is still uncertainty about that—that we would go ahead anyway and construct this kind of a facility, Because, obviously, before it could be constructed it would need approval from the appropriate regulatory agencies.

So I think what we are saying is that we have a plan that we believe is sound and will meet the concerns raised, and that as soon as approval is forthcoming from the appropriate agencies, this plan will be completely designed, constructed, and made operable within 2 years. But necessarily approval is a prerequisite to going forward, and I'm sure that the conferees would understand that. I don't know if I have directly answered the question or not.

MR. STEIN: That was Mr. Purdy's question.

MR. PURDY: Well, I was assuming, of course, that if you had the approval of the various agencies, is it your feeling that the plan that you are proposing meets the objectives of the Court and you do not contest the findings of the Court?

MR. FRIDE: That would be correct. If we had the approval of the Minnesota Pollution Control Agency and this conference and the appropriate agencies, we would go forward. We would not contest the ruling of the Court, even though there are aspects with which we have some disagreement. And in the interest of solving this problem and of relieving the concern, and of going forward with what seems to be a sound engineering concept, we would go forward despite any kinds of concerns along that line.

MR. PURDY: Thank you.

MR. STEIN: Are there any other comments?

MR. FRANGOS: Mr. Chairman, I don't know if this will come out in more detail as you get into your presentation, but perhaps Mr. Fride or Mr. Furness might get into this matter of cost a little bit more.

Would you like to do it now, or do you have some presentation that will give us a little bit more of a breakdown?

MR. FRIDE: Well, I could respond in general terms, Mr. Frangos, to general inquiries.

Mr. Skinker, who will be the next person appearing on behalf of Reserve, of course, has a detailed analysis and can give you technical kinds of information with respect to cost. But if you have some general question I would be happy to see if I could answer it.

MR. FRANGOS: Perhaps I will defer that until your expert gets on.

MR. FRIDE: All right, sir.

MR. STEIN: There was one more point, I think, that we will all appreciate, and I know Mr. Purdy asked about litigation. And, of course, you are in a State litigation situation, and you are in a Federal enforcement litigation. Both of these can, of course, lead to litigation if we cann't solve the issue.

However, there is one other factor here which may almost be overriding, and that is that Reserve Mining Corporation is discharging its wastes into Lake Superior under the provisions of a Corps of Engineers permit.

The Corps of Engineers, as many of you know, as announced by the President, is taking into account the effects on water quality now in the issuance of a permit, based on the certification of the State and the recommendation of our Agency, among other things. And no permit no operation.

So this may be the -- because you cannot put it in a navigable water of the United States without such a permit -- and I think that may be an overriding issue. So I don't know if we should resolve this -- if it is fair to resolve this operation, that it is necessarily going to be culminated by the kind of litigation you might think.

This may well result in the question of whether the industry has a valid permit or not. For all these reasons that we have here, for the expressions that we have on one side and the directions of the Court order on the other, I would suggest that the conferees have perhaps the last opportunity at this session of the conference -- I say tonight because I think we have to think about this -- the last chance at this session of the conference to come up with the kind of a resolution where we can get this on the track.

I think one of the statements made before -- and I think this probably is a fair statement -- we have had a deadline; we have extended the deadline. We had a deadline at the beginning of December. We just are going to get this report presumably tomorrow. In other words, there has been at least one extension and possibly one miss, and I don't think we are going to have another chance.

So, while we all may have or apparently have fundamental differences possibly in approach, in the measure of philosphy, I would strongly commend to the conferees, the industry, and all of the others concerned that we try as best we can to come up with a mode of procedure that is going to lead to an equitable solution of this problem without further litigation and further delay, and I say this just on the basis of past cases.

That last case lasted what?

MR. FRIDE: Just about 7 weeks.

MR. STEIN: On testimony alone?

MR. FRIDE: Yes, sir.

MR. STEIN: If we go into another legal contest, you can draw your own conclusions.

What I want to point out is the time it is going to take.

But I want to point out to all concerned that for every day we engage in a procedure like that, as far as I know -- and I have been up there occasionally -- Reserve is operating round the clock, and 67,000 tons of tailings are going into that lake every day.

I suggest before you rest too hard on your principles and figure that we have to vindicate one of them by going to litigation, remember what is going to happen every day while we are doing that.

I am not suggesting giving a thing away, because we don't. But I am suggesting that we have one last chance here to try to resolve this in a reasonable, equitable way, and I hope everyone will come that last mile to stretch out that hand and try to make it. Because if we don't do it here, I am afraid we are just going to have to engage in something which will not result in a clean lake necessarily immediately.

MR. FRIDE: May I make just one comment, Mr. Chairman?

I think that I certainly agree with the majority of what the Chair has said in terms of trying to achieve a resolution of this whole problem as quickly as possible. And I hope that the conferees appreciate that Reserve has not taken the posture here that this is strictly something to be settled in the Courts or strictly a battle of legalisms versus other kinds of legalisms.

We hope that a practical kind of a resolution can result accommodating the major kinds of concerns that have been voiced both here and in the Court.

I might say, too, that as the conferees are aware, the Court, during those 7 weeks, had the benefit of some very distinguished witnesses. Mr. Mayo appeared and testified during that proceeding. Dr. Bartsch appeared. Dr. Mount appeared. Dr. Baumgartner appeared. Some of the best qualified scientific minds in the country. And it was after all of that testimony that the Court reached the decision with which you are familiar.

But I do suggest, too, that we at Reserve would like to try to resolve this and get it solved on a basis that is technically sound and conservationally wise, and to that end, as the Court did in this District Court decision, we would welcome, as we have in the past, monitoring. We would welcome participation. We would welcome testing. We would welcome those kinds of things the technical people feel are best suited to achieve a sound environmental kind of consideration.

MR. STEIN: Thank you.

Are there any other questions?

If not. Thank you, Mr. Fride.

Let's decide when we are going to reconvene. You are going to be about 2 hours?

MR. FRIDE: Approximately. Perhaps not quite that long with the direct presentation, Mr. Chairman. With Mr. Furness having already testified, I would expect somewhere around an hour and a half -- something of that sort -- on the direct presentation; and perhaps whatever questions the conferees might have, I am sure the participants would do their very best to answer.

MR. STEIN: Perhaps we can come in at the regular time.

We will reconvene at 9:30 tomorrow morning.

We stand recessed.

(The conference recessed at 4:10 p.m.)

- - -

☆ U. S. GOVERNMENT PRINTING OFFICE : 1971 O - 428-629